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*Silvester*

By Mr. O'HALLORAN, M. R. I. A.

HONORARY MEMBER of the ROYAL COLLEGE of SURGEONS,  
I N

I R E L A N D;

AND OF THE  
PHYSICO CHIRURGICAL SOCIETY, AND SURGEON TO THE  
COUNTY OF LIMERICK HOSPITAL.

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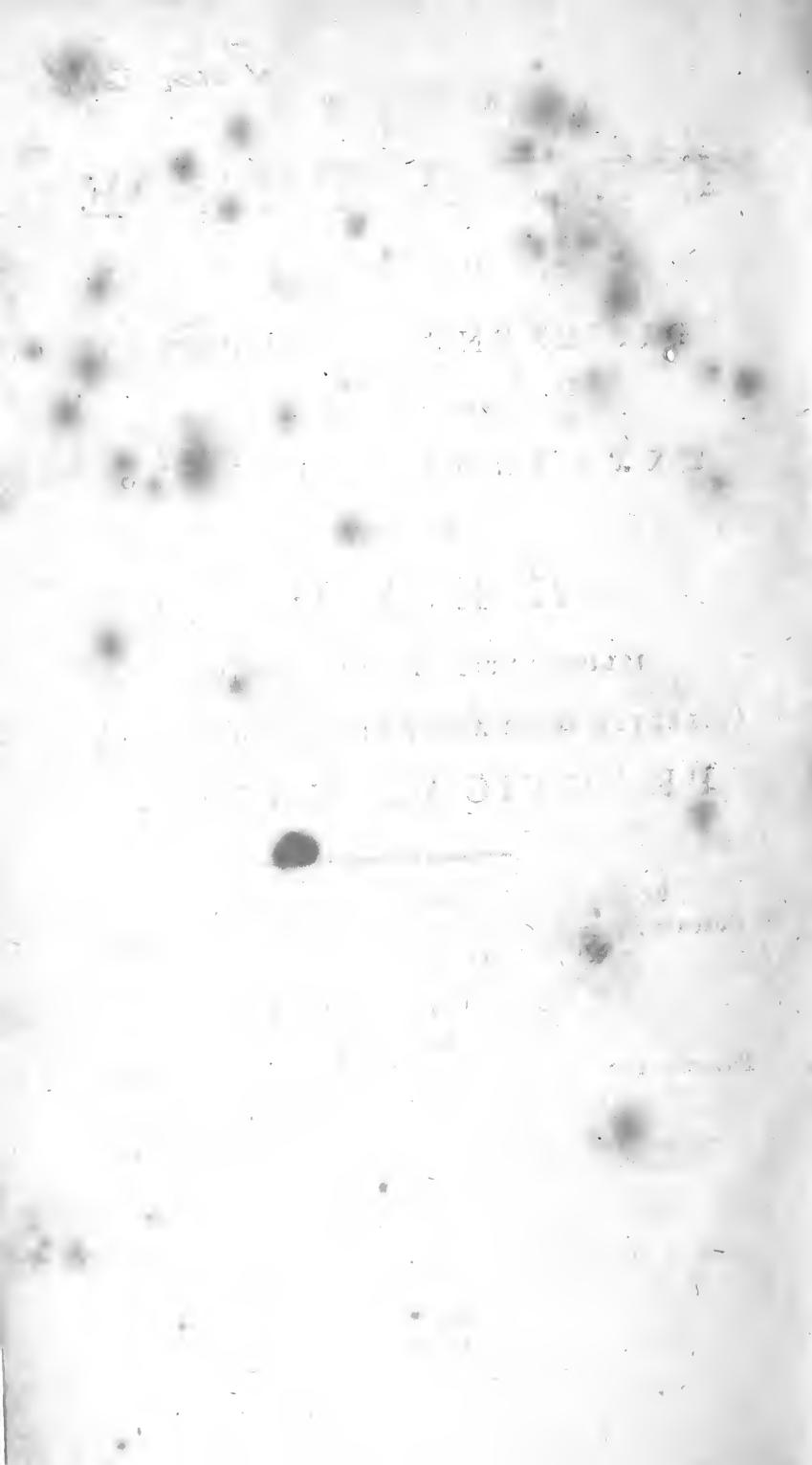
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## INTRODUCTORY DISCOURSE.

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WERE we to estimate the lights thrown on particular disorders, from the numbers of men of eminence who have treated of them ; then should we conclude, that of all the maladies to which human nature is unhappily subject, those proceeding from injuries on the head must be best understood ; as from the days of Hippocrates to our own, they have been considered with a most particular attention.

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But,

But, however great our obligations to our ancestors, and to many illustrious and learned moderns and contemporaries are, yet, the fact is, that our knowledge of this subject, so interesting to mankind, is STILL CONFINED; and very much—*indeed, almost every thing*—remains to be explored! the various disorders incident to injuries on the head, have been by no means discriminated with sufficient precision, nor have their symptoms or modes of treatment been clearly ascertained! Even the use of the trephine is now more indefinite than it was a century ago! Mr. Pott, \* an able writer and most diligent observer, complains *of the darkness and obscurity of this part of Surgery*, and it must be confessed, that the work, now before me, is pregnant with proofs of this truth! A much later author seems to have bestowed no small pains and labour, to illustrate this very interesting subject; nor does he forget to pay himself some compliments on his

\* Surgery, vol. 1, p. 191, Irish Ed.

success;



success ; “ but, however diffident I am” (says he) “ in first dissenting from an established doctrine, IF MY OWN EXPERIENCE IS FOUND “ TO JUSTIFY THIS DISSENT, the more respectable the authority, by which the contrary “ opinion is supported, the more I think necessary to investigate the merits of it.” But, alas ! on a close and critical examination of this performance it will appear, that *observations* and *experience*, almost every where militate against his *assertions* and *opinions*—*for they are nothing more.*

That I may not be deemed presumptuous, in thus assuming the stile of A MASTER ; and by way of engaging the favorable opinion of the public, I beg leave to submit to the candid and critical reader, my pretensions to this character—without doubt, there is no part of the habitable globe, that for half a century past, has afforded such an ample field for *observations on injuries of the head*, as Ireland in general ; this province of Munster in parti-

cular! for our people, *invincibly brave*, notwithstanding the cruel oppressions they have suffered for a century past, and highly irritable, soon catch fire: a slight offence is frequently followed by serious consequences; and sticks, stones, and every other species of offence next to hand, are dealt out with great liberality! To this add the frequent abuse of spirituous liquors, particularly whiskey, which has, unhappily for the *morals* and *constitutions* of the people, found its way to every part of the kingdom! From these HITHERTO UNRESTRAINED CAUSES, \* it is, that many of our fairs, patrons, and hurling-matches, terminate in bloody conflicts; and that violent outrages are frequently felt and complained of, but seldom punished! From this it appears, what superior

\* In the session before last, a bill was brought into the House of Commons, to restrain the excessive use of Whiskey. Certain regulations were annexed to the retailing of this *combustible*, and the price of Spirit License considerably raised: yet, notwithstanding that the public at large were greatly interested in the enforcing this act; from the best information

superior advantages Irish Surgeons have long possessed, in this department of their profession, over those of the neighbouring nations; and whilst I have long deplored, and execrated the causes that gave rise, and still give vigor and animation to all these excesses, I adore the supreme, who has afforded me health, perseverance, and capacity, to avail myself of them, and to convert the follies of my country-men into wholesome information, for the good of mankind !

I have had no less than four fractured skulls to trepan on a May morning, and frequently one or two. In the course of above thirty-five years practice, I may safely affirm, because

on I could procure, in most places it was scarce observed "*eight days after it became in force.*" It is true, the retailers in most places surrendered their licenses ; but scarce a village in the country, or indeed cabin on the road, that did not vend it privately. What success will attend the act passed this year, remains to be told.—But certain it is, that it is in vain to form wholesome laws, if not duly and properly enforced.

truly, that on an average, one month with another, from three to four cases have fallen to my share, of either fractures, concussions of the brain, or extravasations ! The greater my experience and observations, and the further my reading on these subjects extended, the more fully I became convinced of the utility and necessity of the work, which I have now the honour with great deference to lay before the faculty, and the public.

But as no opportunity has been lost by the enemies to the reputation of this most ancient country—and too many of these are domestic ones——It will no doubt be remarked, that if under the present mild and equitable laws, such violences and outrages are perpetrated and continued, what must not have been the state of barbarity of the country when governed by the native codes ; and this must effectually do away all that sound legislation and boasted civilization, which Irish writers give so much credit to their ancestors for ? Will the generous

rous foreigner forgive me, if, for a moment, the PHLEGM of the philosopher is absorbed in the FIRE of the *patriot* ; and that I descend to render that justice to my poor country-men, *which they have for a long period seldom experienced!* Until the beginning of the last century, the present mode of legislation was confined to a contracted corner of the kingdom, and for that reason constantly called *the pale*, or enclosed. Beyond this confined circle, no laws were known, but such as had been in force from time immemorial. The contrast between the two, cannot be more strongly illustrated, than by the testimony of Finglas, Chief Baron of the Exchequer to this district, in the reign of Henry VIII. \* He expressly tells us——“ that the English Statutes passed  
“ there, *are not observed eight days, after passing them* ; whereas, these Laws and Statutes,  
“ made by the Irish, *they keep firm and stable,*  
“ *without breaking them, for any favour or re-*  
“ *ward !*” Sir John Davis, had a much bet-

\* Baron Finglas's Breviate of Ireland.

ter opportunity of knowing the manners and dispositions of the Irish, as being the first English Judge, who went on Circuit outside the Pale, in the reign of James I. He affirms, " that there is no nation under the sun, that ' love equal and indifferent justice better " than the Irish, or will rest better satisfied " with the execution thereof, although it be " *against themselves!*" \* Lord Cooke expresses his sentiments in words still stronger, " for I " have been informed by many of them who " have had judicial places there, (in Ireland) " and partly of my own knowledge, that " there is no nation of the Christian world, " that are greater lovers of justice than they " are, which virtue, must of necessity, be " accompanied by many others." † The present race of Irish are *still* a brave, an hospitable, and a generous people, possessing more native good sense and penetration than any other commonality I know. No people in the world

\* Sir John Davis's History of Ireland.

† Cooke's Institutes, Ch. 76.

could be speedier made amenable to law and justice, were any pains taken with them ! but, alas ! there is a species of men, that have long interposed between them, and both——*hinc illæ Lachrymæ !*

Every one knows, that different liquors have different effects upon the same person. The man who becomes good-humoured, and expanded by generous claret, will not be so pleasing, with large libations of punch. If inebriated with spirits, he is capable of any crime. The cheapness of infernal spirits, the facility, with which they are procured, and the *attention* bestowed in making them circulate through the most sequestered parts of the kingdom, will well explain their baneful influence, without any intemperate inferences.

Flattered with the pleasing hopes, that from the extensiveness of practice, and the accuracy of my observations, I should be enabled to *illuminate* this very opaque region of Surgery,  
and

and throw into high cultivation an hitherto rugged and ungrateful soil, I have taken the most comprehensive view of the subject, and added some new observations on injuries of the head, unnoticed by other writers. The work, after mature reflection, I have divided into Chapters, in the following order, illustrating each by a few practical cases.

The first points out the manner of treating wounds of the scalp, from such as merit attention to the most complicated. I have been more than once witness to dilacerated wounds of this class, where the loose detached flap has been inhumanly cut off, which, by very little trouble and attention, would be perfectly re-united, and nature saved much trouble and pain.

In the second, extravasated blood, formed under the scalp is considered. Mr. Pott \* thinks accidents of this kind, seldom require

\* Injuries of the Head, p. 21.



any operation, and almost always disperse by proper discutients; however, the reader, who peruses this Chapter, will, with me, judge otherwise, and be convinced, that most alarming symptoms may arise from distinguishing, between emphysematous swellings of this part and extravasations!

The third Chapter is of a most interesting nature, and demanded the utmost exertion of abilities I was master of, to throw it into DAY! that wounds of the scalp, in which the pericranium is injured, without offending the bone, though seemingly, for many days, of little consequence, yet, too often and fatally has been long known and deplored! M. Rohault,\* Surgeon-general to the Sardinian armies, has formed on this subject an hypothesis, plausible indeed enough. The intimate adhesion of the dura-mater to every part of the cranium, had been demonstrated to the Academy of Sciences, long before this

\* *Traité des Playes de Tete*, p. 27.

gentleman became a writer, by the celebrated Mery. He supposes, where the bone has not given way to the stroke or fall, that the small vessels, by which the dura-mater is connected with it, may be—first, either greatly distended; or—secondly, totally separated from it. In the first statement, the accidents cease from the fourth to the seventh day. In the second, or where there is an extravasation on the dura-mater, they continue much longer, and are more or less dangerous, according to the extent of the separation. M. Le Dran, accounts for the formation of pus on the dura-mater, from injuries of the pericranium, by observing, that the communication between these membranes, at the point of percussion, being thus broke, they melt into matter; and if the blow has fallen with more violence on the inner than the outer table of the skull, the quantity of pus will be much greater underneath. Hence, in all injuries of the pericranium, in which the skull is not fractured, but contused, and which, he says, will

will be known by a blackish stain on it, he forceably recommends the application of the trephine. \* Mr. Pott has embraced nearly the same system. † The communication by blood-vessels, and otherwise being (says he) thus broke, between the pericranium and dura-mater, the inflammation in the one, is gradually communicated to the other; and thus matter becomes formed under the skull, if not prevented by large and repeated bleedings and other antiphlogistics. But when the matter is formed, the operation is unavoidable.

My esteemed friend, Mr. Dease, of the Royal College of Surgeons, has lately favoured the public with an ingenious Treatise on this subject: indeed the best I have read. ‡ He contends against Mr. Pott, that the communication between the external and internal mem-

\* Observations de Chirurgie, T. 1, p. 84, &c.

† Injuries of the Head, p. 22, &c.

‡ Observations on wounds of the Head.

branes of the skull, cannot easily produce such inflammation and abscess on the dura-mater, as will account for such numbers of deaths, and many of them so suddenly too! he thinks the violence of the blow or fall, is communicated in such cases, to the pia-mater and brain, by a species of concussion. He by no means approves of these copious evacuations by phlebotomy, so strongly recommended. In the beginning, purgatives may be attended with salutary effects; as also what he calls sedatives, as *sp. nitri dulcis*, *sp. vitrioli*. blisters and sinapisms are not without their use. Opium, he has little reliance on. Bark may be highly useful with acidulated liquors, to prevent absorption. On the whole, when the univocal signs of matter formed on the brain appear, he recommends the operation, and piercing the dura-mater with a fine lancet, if necessary.

Mr. Bell, of Edinburgh, judges plentiful bleedings, in the first instance, highly necessary;

fary ; but then he judiciously recommends them, as near the scene of action as possible. Cupping,\*scarrifications, and leeches, as topical applications ; and when more profuse ones are found necessary, he thinks, the jugular vein or temporal artery, should be the places of action. The contused parts should be opened, and any confined matter freely evacuated ; which, if it does not remove, may at least hinder the increase of matter on the brain. In fine, when the matter is formed there, the trepan should be immediately had recourse to. \*

Without descending to remarks on the dissonant opinions of authors on this very interesting subject, I shall disclose lights in which I have considered it. With confidence then I affirm, that wounds of the scalp, whether by incision or contusion, in which the pericranium is engaged, will not *in general*, produce more alarming symptoms than similar injuries

\* System of Surgery, vol. 3.

on other parts, provided the habit of body be not materially vitiated. When this is the case, we know from melancholy experience, that hurts, trifling in appearance in other parts, are often followed by most formidable symptoms; and why not here? If the communication between the pericranium and dura-mater, by means of small blood-vessels, conveyed the injuries on one membrane to the other, why is it not constant and uniform, as we know Nature's laws invariably are? But this is by no means the case; and if researches were to be made, it would appear, that not one in twenty desperate wounds of the head, with denuded bone, have had any alarming symptoms whatever, during the progress of the cure! The advocates for this doctrine acknowledge, that numbers of cases occur, in appearance very formidable, which are cured with little confinement or trouble. How many gallant poor fellows have I met with, who would in a manner scorn to bestow the smallest attention to desperate wounds of this  
fort?

fort? the case of Yves, (Obs. 8.) is as strong a proof of the absurdity of this doctrine as can be adduced! But if the obstruction of communication between the dura-mater and pericranium, is the cause of inflammation and abscess, why has not the antiphlogistic course so strongly recommended, and so steadily, and in many instances so early pursued, prevented the formation of matter on the brain? It is acknowledged, that it has not! But the very symptoms attendant on this complaint, prove to demonstration, that inflammation has not the smallest share in it. The gleety matter from the fore; the languid pale aspect of this last; the fore going from bad to worse; the spontaneous seceding of the pericranium from the skull; the rigors and horrors, are surely symptoms very remote from inflammation! If a wound or hurt in any other part of the body, instead of laudable pus, discharges a thin sanies: if the fore assumes a bad aspect: if rigors and lowness come on, is it to bleedings and other evacuations, which tend visibly to destroy what little remains of the vis vitæ, we

have recourse? it is not! it is to active stupes and warm poultices: it is to animating dressings, to high diet, bark, and every other stimulant that can help to restore debilitated Nature!

Just so, should wounds of the head of this class be treated. In the beginning a moderate line should be drawn between repletion and abstinence. When instances of a bad habit, *even down in the fore*; then recourse should be had to such medicines as I prescribed for Meehan, (case 7,) and so on, to other resources, still more powerful, as described in the succeeding chapter. I have considered this matter formed on the brain, as of a cold nature, and rather a translation. Whatever will give strength and stimulus to the absorbing vessels: whatever can by irritation, or otherwise, promote the secretions, are the sure modes of cure. In dropsies, and leucophlegmatix, where the circulation is carried on languidly; where the secretions by the kidneys are small; by the skin, none



none at all, I have been astonished at the secretions by urine and sweat, which I have sometimes procured by an active dose of diaphoretics, in the course of a night ! When I had fixed my opinion, as to the cause of matter formed on the brain, I applied the same doctrine to it. I considered that the matter yet forming might be re-absorbed, and any access to it prevented. That even by making this matter more active and warm, and nature more powerful in her resources, she herself might point out the mode of relief ; as in the formation of pus on the brain, by real inflammation. (Case 14.) It is in disorders of this class, that my esteemed friend Mr. Bromfield's sudorific process can only be serviceable. \* In concussions of the brain, I apprehend it can be of little consequence ; for where no matter is formed, no separation of the dura-mater happens. At least, on a minute inspection of very many, who died of this complaint, I never met with either ! If indeed, the examination is delayed for very

\* *Chirurgical Observations*, v. 1, p. 9, &c.

many hours, some water may appear ; but this is only produced by the melting down of parts of the substance of the brain : not by an acquired, but to a natural cause.

But the formation of matter is not the only alarming complaint that follows injuries of this class. Water may become collected on the brain from it ; and this forms a still stronger proof of the above doctrine. A perusal of the sixth chapter, will shew the pains I have taken to elucidate this very obscure subject ; and I flatter myself, that the doctrine of hydrocephali whether from external or internal causes, will no longer be so obscure and unintelligible as it has been. It is a known fact, that in about thirty or forty hours after dissolution, water will be found in the brain, and often in the thorax, from the mere destruction of heat and circulation only ; how then in the name of common sense, can we suppose with Dr. Fothergill, \* that an hydrocephalus from its commencement to its fatal conclusion, is

\* London Medical Essays, vol. 4, art. 3.

circumscribed within the space of twenty-one days at farthest? The very innate heat and circulation, how languid soever, must counteract so hasty, so rapid a colliquation! In the observation that gave rise to this enquiry, (Case 15,) we see the space of more than three months intervene from the blow to his death; so long a time did the water take to accumulate! In that of the child, (Case 16,) the complaint began soon after parturition. At fifteen months old, she was far from being exhausted; in five years after, was alive and better; and at this day, (September 1789,) the tumefaction of the head is rather lessened than encreased! The Doctor says, that strong sprightly children, are most exposed to this complaint; but from the very nature of it, and from what we observe from its spontaneous formation, a coldness in the constitution, and a languor and slowness in the circulation must necessarily be pre-supposed. Besides, he seems at a loss how to discriminate between disorders of this class, and these rapid fevers in children, in which the head is en-

gaged, which he gravely tells us proceed from worms ! but worms in children, and nervous complaints in the more advanced stages, preclude all further enquiry, satisfy the public, and save the faculty a great deal of trouble and thinking. Had the reputation of Doctor Fothergill kept pace with his abilities, I should not descend to make these strictures.

Concussion of the brain, by a natural progression of injuries communicated to the soft parts, becomes the next object of enquiry. To do this with greater precision, I judged an enquiry into the seats of the vital and animal faculties a necessary præcognitum—at least as satisfactory a one, as the nature of the subject would admit of. Besides, it might go in aid, to oppose the dangerous doctrine of materialism ; and at the same time prove to the Surgeon, that an opening, when necessary, may be as safely made through the corpus callosum, as through any other part of the brain, as it is here, that M. La Peronie places the seat of the soul. \*

\* Memoires de l'Academie Royale de Chirurgie, T. 2.

Concussions of the brain, I have divided into three classes,——first, mortal concussions ;——secondly, recovery, with insanity ; and thirdly, perfect recovery. In the treatment of this disorder, I have totally rejected the use of the trephine ; and although in most of the cases I have produced, it will appear, that for very many years, I had adopted, as well in this disorder, as in that of extravasation of matter on the brain, the usual mode of treatment, by profuse evacuations ; yet, a careful retrospection of this practice, and these cool reflections which every honest practitioner must naturally make, satisfied me, that it was highly exceptionable. I have for some years past used evacuations very sparingly. In this disorder, it is the brain—it is the medulla oblongata, and the nerves proceeding from it, that are more or less injured ; and I have used opiates, blended with the nervous tribe, with great success, in curable cases of this class. I have given my reasons at large ; and the informed and clear-sighted practitioner will judge for himself.——

Though

Though I in a manner tremble, in making the following remarks on extravasated matter, and on concussions ; yet, as it appears to me a duty I owe to justice and to the public, I cannot suppress them. On a fair calculation, I do affirm, that TEN patients perish from these two causes, for one who dies of a fractured skull ! An inquest is called on a person who perishes from either cause. A Surgeon may probably be sent for. He examines the head superficially ; or may, perhaps, be directed to open the head, and examine more minutely the state of the parts. He finds no fracture, tho' he may in some cases find matter on the brain. He reports no injury done to the skull. The Inquest bring it in accidental death ; and at the following Assizes, the delinquent is acquitted, though the man visibly dies of the injury, as another does of a gun-shot, or other penetrating wound. If I forget not, about twenty-three years ago, Balf and M'Quirk, who were convicted of the murder of a Mr. Clark, at the election for Middlesex, at Brentford, were both pardoned, because on a representation

sentation to the King, by some medical gentlemen, who had the curiosity to take up the body after interment, it appeared, the skull was not fractured, though it had been proved on trial, that matter was found lodged on the brain ! I have now discharged my conscience, leaving it to Judges, to Surgeons, and to Juries, to act as they think fit, and decree in these killing cases murder, or not.

Closely connected with this subject, is the doctrine of extravasation ; but this is by no means to be confounded with extravasation from wounded pericraniums, of which we have already spoken. If I understand the different writers who have handled this subject right—and I have taken much pains so to do—the present subject alludes to extravasation of blood, of lymph, or water, or of all combined, immediately, or soon after, succeeding to a violent injury of the head. It had been affirmed by some Members of the Royal Academy of Surgery, that on examination of bodies after death, who died with all the symptoms of concussion,

cussion,

cussion, that nevertheless, in some, considerable extravasations of blood had been found under the skull, in others none.—It became then a question——What are the symptoms of mere concussion, and how to be distinguished from concussion attended with extravasation? It had been much wiser first to establish *the facts*: for it is a question that has had a most pernicious tendency, with respect to the sick, has made the operation of the trephine more indefinite than ever, and has thrown the doctrine of concussion into the utmost confusion! It is now pretty well agreed on, that the concussion and extravasation are different injuries, yet the symptoms of both are nearly the same; and Mr. Pott affirms, \* that people have died with all the symptoms of concussion; yet, on inspection, it became evident, that the cause was owing to extravasation. The immediate loss of sense and of motion following an hurt on the head, is attributed to concussion. If these symptoms die away, and are succeeded by

\* Pott on Injuries of the Head p. 131.

others,



others, in two or three days they are decided proofs of extravasation, and call loudly for the operation ; yet Mr. Pott contends, that the symptoms of this last may so speedily follow those of the former, as not to be distinguished from them, and therefore the trephine must be had recourse to. Or indeed in other words, where the signs of concussion continue, in which the trepan should never be used, they are now converted to signs of extravasation, where its aid must be called in ! But can the symptoms of concussion and extravasation be at all compatible ? I think not ! Why does the loss of sense and motion so speedily follow concussion ? It is because the skull has resisted the momentum and velocity of the body, as well as the dura-mater, and so the whole force is thrown on the brain and nervous system. But in this *imaginary extravasation*, the dura-mater must be separated from the skull, the vessels of communication between them, must pour out their contents, and the force of motion being thus broke, symptoms of concussion must be, at worst, but light. But if any thing could establish

blith this DANGEROUS DOCTRINE of extravasation, it must be, where the force of motion has formed a separation between the dura-mater and skull. Now fissures of the cranium have been as familiarly and as cavalierly treated of by almost all writers on the head, as fractures and concussions, and as if they were equally common ; yet, in the whole course of my practice, I never met but a single instance of this species of hurt ; and the man died immediately or soon after, and the symptoms were these of concussion——though on opening the head, there was a sensible separation of the dura-mater from the cranium, the length of this crack, yet no blood appeared, intervening (see case 25) again, where the dura-mater was most uncommonly separated from the skull, and an almost unexampled depression of this membrane and of the brain ; yet, not a single drop of blood was interposed ! (Case 34.) To discuss this interesting affair, I have bestowed an entire chapter, but it is my earnest wish, that the reader in perusing it, will have a reference to what is  
here

here advanced, because it comes in aid to what was there omitted.

Having treated fully, and established on unerring principles the univocal symptoms of these disorders, in which the cranium is only the medium of conveyance, as convex glasses converge the sun's rays to a fiery point, without partaking of its heat.—It now remains to consider those injuries sustained by, and confined to the *skull* and their effects. To a certainty, the observations of writers, for more than half a century past, far from elucidating this most interesting subject, have visibly tended to throw it into greater confusion, than it had been in. For instead of determining with *precision* the cases in which an operation (in itself extremely painful and cruel, and in its consequences dangerous) should *only* be had recourse to, they have so multiplied them, that scarce an hurt on this part, attended with untoward symptoms, that does not verge to trepanation. So apprehensive of latent fractures being concealed under anomalous symptoms,  
that

that different parts of the head are frequently laid bare, and trepaned for this supposed ANGUIS IN HERBA ! But it will appear to demonstration, that far from being in dread of latent fractures, there are numbers of visible ones, that require *no operation whatever !* and this important fact established, it is to be hoped will in future prevent these bold—these cruel experiments !

A fractured skull unattended with *concussion*, has for some days, no particular symptom to distinguish it, but what can be derived from the touch or the probe. Of course, anomalous, muddy and obscure appearances will not; nor cannot be mistaken for the remotest signs of fracture. The 13th chapter, with what has been said above, will, I hope, for ever do away the supposed combination of concussion attended with extravasation; and these facts established, and the operation of the trephine confined to its proper sphere, will appear, one of the most useful and certain medicines between life and death, that the ingenuity of  
man

man ever imagined! Fractured skulls I have distinguished, *first*, into these with and without depression. These last, require no operation whatever: and I have illustrated *this most important truth* by a variety of proofs! Depressed fractures, where the operation cannot be dispensed with, I have divided into simple and compound. By the first, I understand these, where the bone has suffered a single depression; by the other, where the bone has suffered in more places than one; and I have pursued the subject by cases in point in all these different injuries.

Whether it proceeds from the natural intrepidity and robustness of our people whose minds are not easily depressed, the purity of the air, or the goodness of our waters, which undoubtedly approach nearer to the pure element than any others I know of, \* or let it  
arise

\* Triumphus affirms, that the purest simple waters in Germany, yield four grains of extraneous, and indissoluble  
matter,

arise from any other cause whatever ;—the fact is that fractured skulls amongst us, when attended to in any reasonable time, are seldom or ever followed by fatal consequences ; and that even when long neglected, the resources of nature are astonishing ! It is for this reason that in Chap. 13, instead of giving a dull narrative of cases of this class, I confine my account to only three, and these, more from the remarkable incidents that appeared, than from any other motive.

I consider the operation of the trepan, as very cruel, a painful, and a dangerous one ; nor to be attempted without the clearest evidences of its necessity ; and which I think can never be mistaken from the principles  
laid

matter, from a quart carefully evaporated. The late Doctor Hales affirms, that the Spring that supplies Hampton-Court, and one of the purest in England, affords but three grains of solid contents from a quart. Dr. Rutty has tried many springs, which gave even less than a grain from a pint ; and I have frequently evaporated a quart of the Shannon water, near the town, and at Castle-Connell, and never got more than a grain and an half of residuum from a quart !

laid down. It is on this account, that I condemn in the strongest terms repetitions of it. There are very few cases that can demand them, and these are pointed out. The most extended fracture, if confined to one bone, will scarce ever require a second operation ; and the remainder of this work is pregnant with the proofs. The 15th chapter treats of simple depressed fractures, that were not relieved 'till the symptoms of depression strongly marked their necessity. In the 16th, compound fractures are considered, in which the operation was recurred to, in the first instance, or before the symptoms of a depressed cranium appeared ; and the 17th treats of similar injuries, unrelieved, 'till the symptoms of depression loudly proclaimed the necessity. The 18th gives some very remarkable instances of the successful efforts of Nature, to relieve herself in these melancholy cases. But, besides all these, the method proposed, and successfully pursued by me for very many years past of preserving as much flesh as possible, in the clearing away the integuments, for the operation, must be at-

tended with very salutary effects, and contribute greatly to accelerate the cure. The great utility of managing the integuments with œconomy, will appear in a most striking manner, in case the 54th. And I will be bold to say, that it is, for so much, the most remarkable History that the annals of Surgery can produce ! The uncommon success attending all these cases, has, I own, often astonished me, as I dare say it will every fair and candid practitioner. I am vain enough to think, that the treatment of my patients *otherwise*, so widely different from that hitherto pursued by profuse evacuations, must not have a little contributed to this great object. I have offered my reasons for it ; but as anomalous symptoms may sometimes appear, which have no immediate relation to the original injury, they must be particularly attended to : Case 56, is the only instance of this kind I ever met with, and therefore I have given it in detail.

But considering that this great success in the cure of fractured skulls, might infuse too much confidence



confidence into young practitioners, and that in many instances, much precious time might be lost; the 19th chapter contains a selection of cases, in every one of which, the operation proved useless, by being too long delayed!

The last Chapter treats of fractured skulls, in which the membranes and brain have borne a part: and from what observations I have been able to make, I am much inclined to think, that if the suppuration of the brain be prevented, or even restrained, great hopes of recovery may be entertained. To a certainty, wounds of the dura-mater produce little additional danger, provided the patient be otherwise in a tolerable habit of body; and this proves to demonstration, the safety of opening this membrane when necessary. The exfoliations from bare bones, or the scaling off of parts of the external or internal table, retard greatly the act of healing. Indeed, the unnecessary quantity of the skull laid bare in trepaning, must expose it to much injury; and since I have adopted my method of uncover-

ing no more bone than is barely necessary for the instrument to work, I cannot recollect a single instance of this complaint. But even when I made a more liberal use of the knife, I in general found it of no great consequence. The reader will see the simple principles on which I have acted.

But besides extravasated blood under the scalp, matter and water formed on the brain, concussion and fracture, another injury of a most fatal tendency is, sometimes, the consequence of falls on the head. It has been unnoticed by writers; but from two instances falling to my own share, in the space of five years, I persuade myself it is by no means uncommon—I mean a partial or incomplete dislocation of the vertebræ of the neck—for a complete one, if not immediately relieved, must terminate in speedy death.

I have not been able to give these cases with all the accuracy that they merited; but  
I have

I have stated them truly ; and I think the smallest doubt cannot arise, but that a partial compression of the spinal marrow was the cause of death in both. To professors of Anatomy, I would strongly recommend a due consideration, and a further elucidation of so serious and important a subject.



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\* \* \* THE kind indulgence of the  
Reader is requested for whatever  
Errors may appear in this Edition,  
as the Author's great distance from  
the Capital and other avocations,  
made it impossible to attend to these  
matters.

O ' H.

*Limerick, August 20, 1792.*

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the Capital and other occasions,  
make it impossible to attend to their  
correction.

1710.

London, June 10. 1710.

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## CHAPTER I.

Simple incisive wounds of the head, how to be treated—the ligature always to be avoided—the mode to be pursued, in contused and dilacerated ones, in which large quantities of the scalp are included—illustrated by two remarkable cases.

IN all wounds of the hairy scalp, unaccompanied with fracture or depression of the cranium, concussion of the brain, or injury to the pericranium, the same method of treatment is to be pursued, as in simple wounds in other parts of the body : but when by a violent injury, a considerable part of the scalp is raised, it requires a different kind of treatment, and therefore merits attention. In cases like this, the future is always recommended, and generally practised ; but it is certainly a very condemnable mode, for every perforation of

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the needle is a new violence offered to the parts ; and every ligature an extraneous body. \* It were to be wished, that the sewing up of flesh wounds, was banished from surgery in general ; but in this part, they are particularly dangerous, as tending greatly to the increase of inflammation, in injuries of the head, always to be carefully avoided. In considerable bleeding wounds of this sort, the parts should be united by comprefs, dry future, (if necessary) and by bandage only ; nor for the first two or three days, should we be over solicitous to make this union very close, because, the natural swelling and inflammation of the parts, will, in some measure, oppose it. Considerable wounds of this sort, should be brought to gentle contact ; a little soft, unformed lint, may fill up the opening between the lips, and the whole covered with a pledgit of basilicon ; nor should it be opened for three or four days, or till the discharge shews the suppuration established, unless an hæmorrhagy, or other alarming symptom, intervenes. When suppuration

\* Fibrac sur labus des futures, mem. de l'Acad. de Chirurgie. T. 9.



is commenced, the lips of the wound should, by bandage, and other assistance, be brought closer together, and so retained for three or four days more, according to the discharge and season of the year ; and by this means, a wound, seemingly alarming, and of great extent, will, in a few days, become very trifling.

But contused and dilacerated wounds of the scalp, require a different kind of treatment, and which, if steadily pursued, will also, with a little more time and care, be reduced to the same degree of simplicity as the above. I cannot illustrate better the practice I would recommend, than by presenting to the reader the following cases, and the rather, because they were the most considerable wounds of the sort I had ever seen, and therefore may be supposed to include the practice in every other possible misfortune of the kind.

## C A S E I.

The principal fuel used in this city, is turf, which is brought the distance of above fifty miles, by river floops, from about 14 to 20 tons burthen each, of which about 200 ply on the Shannon for this purpose.—One Mahony, the owner of one of these, the 20th of January, 1760, being in liquor, and attempting to get on board her from the Quay, his foot slipped, and he fell in, head-foremost: a very considerable dilacerated wound was the consequence, which I soon after examined. It commenced a little above the orbit of the left eye, stretched over the coronal and parietal of that side, and terminated behind the left ear; the dilacerated scalp covered that side of the ear and face, and exhibited a very disagreeable sight. It bled smartly before I came, (which was about half an hour from the accident) and was besides very foul and dirty. After washing the parts gently, in warm water and claret, I laid some large pledgits armed with basilicon

con on the flap, and some soft lint, thinly spread on the head, then turned up the flap, and covered the space, between the flap and sound part of the head, with a large pledgit of the same basilicon. I secured the whole in the following simple manner : I laid graduated compresses over the wound, beginning at the ear, and then with a band, made three circulars from the pole, round the head. To this band I fixed slips of linen, at the diseased side, which crossing over the different directions of the wound, were pinned from place to place at the opposite side. As he had already lost so much blood, and was, besides, still a good deal intoxicated, I did not then bleed him, but had that operation performed next day, and again the day following. He took also at times powders, E. G. R. nitri purif. dr. duas, p. rad. jalap. scrup. duos M. and divide in chartul. 12, —these kept the body gently open ; nor did I attempt to open the wound until the 24th, when the abundant moisture of the bandages, proved suppuration well established. I had some flannels wrung hot out of a decoction of the bitter herbs, applied to the parts to soften

the bandages ; and after their removal, a few stupes more, and then removed the pledgits, &c. I introduced a much smaller one, armed with a digestive, between the flap and head, but without attempting to remove the flap, and with the discharge and stupe, a good deal of dirt was also removed. The 26th, and again the 28th, I dressed as above, but always lessening the surface of the intervening pledgit. The 30th, I pressed as gently as I could the *bare* flap on the uncovered parts, covered the whole with graduated compresses, wet in spirits, secured the band as above described. The 2nd of February, there was a firm coalescence in every part, but near the ear, where the discharge, still mixed with dirt, continued a few days longer. The flap did not exactly cover the surface made bare, but the fore was so trifling, as to require but a little dry lint and plaister ; and in 26 days from the accident, he got a complete cure.

C A S E

## C A S E II.

Michael Jones fell down the stone steps of a projecting cellar, in the evening of the 16th of November, 1784; the consequence of which was, a very extended wound, stretching from the upper edge of the internal canthus of the right eye, over part of the coronal and parietal bones, and terminating behind the right ear. The flap hung over the cheek, was bruised, and very dirty, and exhibited a very frightful appearance; it bled freely before I saw it, and finding the bone no where bare, my chief attention was employed in returning the flap. I first had cloths imbibed in warm water and claret, which gently run down the fore; I then spread lightly the ung. e gum. elemi, on book lint, on both sides, which I laid on the uncovered part, and then turned up the flap, which was secured by plaister and band. Besides a good deal of dirt that still adhered to the flap, and on account of its contusion, I conjectured it would require some days before an adhesion could take place. Next morning he

was

was bled, and I directed powders of nitre and jalap to keep the body gently open, and prevent the access of fever. I did not open the fore until the third day, when the moisture of the bands informed me, that suppuration had commenced. I had the compresses softened by stupes of the bitter herbs, and then removed the dressings, which were charged with a good deal of dirt; these were replaced by fresh ones, covered on both sides, with some of the former digestive. I continued dressing in this plain simple manner for six days, when the flap appearing cleaner, and better coloured, I laid it exactly on the pericranium; and did not remove the bandages for three days, though they were moistened twice a day with some decoction of the bitter herbs, animated with spirits. In a word, in the course of twenty-three days, there was a firm adhesion of the parts.

## CHAPTER

## C H A P T E R II.

Considerable extravasations of blood on the cranium, from external injuries, without apparent hurt, how to be treated; and how distinguished from emphysematous, puffy swellings of this part.

**T**HAT the skull may be fractured, without the outward covering being at the same time injured, is easily conceived; because, we see every day, dislocations, and extended fractures of the extremities happen, without the smallest injury to the fleshy parts. But that, from a violent fall, or external injury, blood-vessels creeping on the cranium, should be burst, and the very pericranium tore from its close adhesion to the skull, without any wound, or even contusion of the scalp appearing, is not easily accounted for. But, without descending to mechanical principles, to explain these

these phænomena, let us proceed to what is infinitely more useful, a plain recital of matters of fact.

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### C A S E III.

In November, 1767, John Evans, a labouring man, of about 35 years of age, attending the building of our new Custom-house, fell from a scaffold of a considerable height; his fall was a good deal broke in the passage, otherwise he must have been killed on the spot. The right side of the head, was the part principally affected; and in some short time after, he was brought to the Hospital, (where I then was) in a manner dead, and cold. The coronal and parietal bones of the right side, were considerably puffed up and swelled; and to the touch, and from the appearances, it would seem, as if both bones were rather crushed to small pieces, than fractured. Eager to relieve the dying man, by removing part of these splints, which I did suppose, were pressed in upon the brain,

I made



I made a large crucial incision on the integuments, which had not received *the slightest injury from the fall*, and a large issue of bright collected arterial blood burst forth, from which he seemed to receive instant relief. All seemed to the touch, perfectly sound underneath. The wound was dressed with soft unformed lint, covered with plaister, and the whole secured by proper bandage. In two hours after, he was bled largely, and I ordered him the saline mixture, with *sp. nitri dulc.* and *fyr. de althea*, to be taken at times, and a glyster to be thrown up in the evening.—It may not be amiss, once for all, to observe, that the decoction, I mostly direct in these cases, is, from an ounce and an half to two ounces of salts, dissolved in about ten ounces of whey, to which a spoonful of sweet oil is added; this is made with very little trouble, and its effects are speedy and certain.—But to return, he passed a tolerably good night, was quite collected and composed, and finding the dressings to adhere very closely, I contented myself with a second bleeding, and in the evening, another decoction, which, like the former, procured two large evacuations.

The

The following morning, the compresses, &c. were softened by a sponge and warm water, and the dressings removed ; but on the closest inspection, no fracture was found, though a branch of the external carotid was opened, and the pericranium, for above an inch, was longitudinally torn from its adhesion. The parts were again dressed with soft lint, and by way of precaution, more blood drawn from the arm. The 16th, being the eighth day from the accident, finding suppuration thoroughly established, and the inflammation removed, I endeavoured to bring the parts into closer contact, by omitting the lint, as an extraneous body, from between them ; and, in a few days after, the fore was completely healed, and he discharged the Hospital.

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#### C A S E IV.

A young nobleman of great good sense and erudition, as well as of exquisite taste, in October, 1769, in a hunting party, near Castlemain,  
in

in the County of Kerry, was thrown from his horse, to a considerable distance, and pitched on his head ; he was taken up senseless and motionless, and carried to the house of the Revd. Mr. Godfrey, contiguous to the spot ; when Mr. Murphy, Surgeon to the County Infirmary, and Doctor Casey, were sent for to Tralee, and Doctor Lawler to Killarney, all in the neighbourhood. An express was at the same time, or soon after, forwarded to Doctor Shearer, and to me, requesting our immediate attendance ; though the distance was near 70 miles, yet we reached it very early in the morning of the next day. We found him heavy and comatous, with an hard, full pulse, though twice largely bled in the interim. His head had been close shaved, and on the right side of the parietal, near the vertex, was a large tumor, nearly as big as a middling inverted sloop-bason. To the touch, it seemed to contain a fluid, and I boldly asserted that it was extravasated blood, though the integuments received no visible injury. I proposed an immediate issue of this blood, but it was opposed by some of the gentlemen, who sensibly observed, that

puffy

puffy tumors of the scalp, often succeed external hurts on the head, and in some time subside, without the necessity of any operation. Though I agreed, as to the justness of their remark, yet, I observed, that the present case totally differed from any thing of that kind ; for that in such swellings, they generally subsided in a few hours, by the application of compresses, wet in spirits and vinegar, or in the vegeto-mineral water ; whereas, in the present case, by report, the tumor rather encreased from the time of the fall : Doctor Shearer was of my opinion ; and the other gentlemen then requested, that I would perform whatever operation I thought necessary. After acknowledging the compliment they paid me, without loss of time, though greatly fatigued, I directly prepared my dressings, and made an opening on the tumor, of above two inches in length, when near nine ounces of florid, limpid arterial blood was at once received in a basin. When the wound was cleaned, I examined with the utmost attention, the parts underneath. I found the pericranium torn from the skull, near an inch and an half, an artery wounded, which,

which, however, now afforded no blood, but the bone underneath free from any visible injury. The other gentlemen who examined it after me, were of the same sentiments, and I immediately after dressed with soft lint, with a plaister and bandage.

We agreed, that in an hour after, he should be bled, but in the arm, and Doctor Shearer and I retired to take some rest. On visiting our patient, a few hours after, we found him much lighter, and more collected, and the comatous tendency sensibly abated; the pulse, however, still continued pretty full and quick, and that evening he lost more blood, and a decoction was thrown in, which procured two or three plentiful discharges. He passed that night better than the preceding. The fore was opened next morning, and being quite satisfied of the parts being free from fracture or depression, the bare cranium was covered with soft lint, and over the wound, a digestive, with bandage and plaister. In a word, Doctor Shearer and I quitted our patient, after an attendance of nine days, being totally free from fever,

fever, heaviness of the head, or any alarming symptom whatever, and nothing remaining but a flesh wound, which healed in some days after. He has since taken the tour of Europe, without ever having the least reason to recollect this unlucky accident, and I trust that his country will long benefit by his observations and abilities.

I have met with four cases, much of the same nature, but nothing so alarming as the above : in two of them, after waiting a couple of days, I found myself under the necessity of opening the integuments, and about two ounces of grumous venal blood was discharged from each, but in neither instance, was the pericranium injured, and the wounds healed very kindly. Of the other two, one merits being recorded, as the symptoms were alarming, and as it may be a kind of criterion, to determine on the necessity of opening the integuments, or omitting it.

## C A S E V.

A journeyman watch-maker, in Jan. 1759, received a violent blow on the temple of the left side, which felled him, and he continued in a degree of insensibility for near an hour ; presently after, he vomited largely three or four times, and when I visited him, which was an hour and an half from the accident, he complained of a violent head-ach, and puked whatever he drank : the external injury was nothing but a pretty considerable tumefaction of the teguments, which prevented me from judging with precision, what the injury might be underneath them. I contented myself for the present, with applying compresses, wet in spirits of wine, and vinegar to the swelled parts, and causing him to be copiously bled in the arm, which operation was again repeated next morning. The tumor was somewhat lessened in size ; the same dressing was continued, and

next day he took physic : the fourth morning, the tumor subsided, with every other alarming symptom, and in a couple of days after, he returned to his usual occupation.

### R E M A R K S.

Puffy emphysematous tumors, are often the consequence of contusions on the head. In slight injuries, or indeed, in more considerable ones, they may be known by the touch, rising suddenly, and yielding to the finger a sort of crepitation ; but what makes the univocal sign, is this—that by the application of compresses, wet in spirits, they sensibly lessen, and in the course of three or four days entirely disappear ; whereas, where blood is extravasated, they rather encrease than lessen—at least, they do not sensibly subside by these topics, especially, if the extravasation is considerable, as in the preceding cases. M. Malaval was called in to examine a tumor of this kind, fifteen days after the accident, and which, in this time, could not be brought to disperse by spirituous application ;



tions; he opened it, and the enclosed blood burst forth with rapidity.—Mémoires de l'Académie de Chirurgie. T. 1. p. 345. But though in the recited observations, the evacuation of the blood, with bleeding and antiphlogistics, effectually removed all the symptoms, yet, I have no doubt, but many such cases may occur, which may be succeeded by more formidable symptoms—for instance, by inflammation and abscess of the dura and pia mater. But as in the next chapter, I shall give the certain diagnostics of this last disorder, and point out the best, and most rational method of cure; I would strongly recommend, to such as may think the present one worth attention, to peruse that also.

## CHAPTER

## CHAPTER III.

Of wounds of the pericranium—Inflammation of this membrane, not communicable to the dura-mater, nor the cause of abscess on the brain.—Injuries of the pericranium in general, not attended with very alarming symptoms, and illustrated by practical cases.

**I**N my opinion, one of the greatest obstacles to the extension of philosophical and medical knowledge—and indeed, to a proper exertion and direction of genius, is, drawing general conclusions from particular facts. But, until more Boyle's rise, to the aid of true philosophy, and more Sydenhams, to that of physic, it will ever continue to be the case!

In surgery, physiology is often admitted; but *here*, it in general is attended with no very dangerous consequences; because, though we  
may

may err in our inductions, yet, the facts, from which they are drawn, remain. However, on the subject of the present Chapter—and a *very interesting one*—the principles generally received, with respect to matter formed on the brain, tending to establish a mode of practice, in my opinion, very dangerous to the sick, merits animadversion.

Wounds and contusions of the pericranium, in which the skull itself remains uninjured, sometimes terminate fatally ; and in every instance of this kind, matter has been constantly found lodged on the brain, or on its membranes. To account for this fact, the generally received opinion is, that the injury done the pericranium is conveyed, by means of blood vessels, to the dura-mater, and thus pus becomes formed. Hence the necessity of profuse bleedings and other evacuations, to prevent the effects of inflammation ! But to give to this hypothesis, a respectable degree of credibility, it should be proved, that almost every injury of this kind, has a similar termination, or is relieved by the treatment recommended,

and almost universally adopted. Now the fact is, that upon a general enquiry, it will be found, that *not ONE person out of TEN*, with wounded pericraniums, will be at all attended with alarming symptoms ; and of the few who are, *not ONE in TEN will recover*, by the method of treatment generally pursued ! Thus then, there are ten times more reason, both for rejecting the principles and the practice, than for adopting them !

But as a thorough refutation of this doctrine will be highly useful to our future practice, I shall examine it more minutely. In fractured skulls, is not the pericranium both wounded and disengaged, particularly in the place of collision ; and though trepanning is neglected or delayed for many days, do the symptoms attending matter forming on the brain, or the matter itself appear ? *neither happens !* Again, in fractures, where the bone presses hard on the dura-mater, where this last appears manifestly injured, and relief has been long delayed, yet, no such effect is produced ! Symptoms of matter on the brain appear

pear in eight, ten, or twelve days, often sooner ; yet, instances will occur in the present work, where the dura-mater has remained longer in a state of depression, without either then, or at any other time, exhibiting signs of matter. If we could suppose an hurt on the pericranium could produce matter on the dura-mater ; surely, when both membranes are injured at the same time, its formation should be more speedy and manifest ? but no such thing !

In general, wounds of the scalp and pericranium, when properly treated, are attended with as little danger, as violent injuries in other parts. I have already asserted, that not one case in ten of this kind, ends fatally. I now affirm (at least, from my own practice), that not one instance in thirty will occur. In the course of above 30 years of painful observation, I was witness of but five deaths, from this species of hurt, and I am certain, I have seen more than two hundred cases. In saying this, I claim no kind of pre-eminence, because they were treated in a plain simple way. How often

often do we behold violent wounds of the tibia, with a torn periosteum do well, without alarming symptoms; nay, is not the bone itself, not only fractured, but frequently crashed, and all is restored by bountiful nature? whilst in other cases, a caries or exostosis of the bone follows a slight hurt; and surely, in these last instances, men of sense will never resolve them to any other, than a defect in the injured part, or a general defect in the constitution.

The subject is of great consequence to the healing art, and of course to the public. I wish not to impose a new doctrine, but steadily to pursue truth. With Lord Bacon, I agree.—“*Non fingendum aut excogitandum, SED INVENIENDUM, quid natura faciat, aut ferat.*” If out of twenty severe hurts of the pericranium, nineteen do well, is it not more rational, to attribute the fatal case to the habit of body, as we see often happens to injuries on other parts? If I am right, in this assumption,—as I think I am——then, (as we have, for some days, no certain

certain symptom to discriminate between the good and the bad cases) will those profuse evacuations and antiphlogistics, so earnestly recommended, and so *long and so unsuccessfully* pursued, be omitted? nay, they must appear highly improper. To prove how nugatory the supposed consequences arising from the communication between the pericranium and dura-mater, are, I have, out of a great variety, selected but three cases in point.

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## C A S E VI.

IN January, 1761, I was requested to visit a servant of Mr. O'Grady's, of Capper Cullin, who that morning fell from a stable-loft of a considerable height, on his head: he was immediately deprived of all sensation, with a slow, regular, and equal pulse; and thus I found him in about four hours after the accident. He received a considerable jagged wound on the superior part of the parietal of the

the left side, with a dilaceration of the pericranium, so that the skull was bare for a large extent. Both eye-lids of that side were swelled, and distended considerably, and all black, as if from extravasated blood. I removed the contused lips, and laid more of the pericranium bare, not doubting, but I should find an extended fracture; but after the closest examination, I found the skull uninjured. I then attributed the symptoms, either to a concussion of the brain, or (which seemed more likely) a rupture of some internal vessels, and which the state of the eye-lids seemed to countenance. My prognostic was far from pleasing; I however, opened the jugular of the affected side, which bled freely; for, on the accident, he had been bled in the arm. I prescribed also a julep, composed of the saline mixture, and mint water, with *sp. nitri dulc. fyr. de althea*, and tinct. *castorei*, and soon after a decoction was thrown up, with good effect. He passed a bad night, moaned much, and had his hand constantly on his forehead. Next morning, I directed another bleeding, and a continuance of the above remedies; but at the same time, informed his friends,



friends, that if I did not find some amendment by evening, I would trepan him that night, or, at furthest, next morning. He seemed, however, in the evening, more composed, endeavouring to open his eyes, and made some ineffectual attempts to speak, which were with me, reasons sufficient, to wait the issue of that night. Another decoction was given, which procured some calls. Next morning he was sensibly better, spoke pretty distinctly, but complained greatly of his head, which, as he expressed it, was ready to split, and there was one who constantly sat behind him, with his hands to press the fore and back part of the head, which was the only relief from his pain he could find. As the lad was but delicate, and rather sunk from the evacuations he had, I judged a further use of them, would rather hurt, than serve, as destroying the native force. I directed light broth, and spoon meats, with a little wine to be given him ; and at the same time, ordered a decoction of the bark, with elix. vitriol. dulc. to be given often in the day, for the wound was very considerable, and indicated

dicated a necessity for this alteration. The fifth morning from the accident, he was seized with a bleeding at the nostril of the affected side, which continued near an hour, during which time, he lost, as near as I could conjecture, about four ounces of blood. All that day, the head was easier, and the tumefaction of the eye-lids (which at every dressing, were endeavoured to be restrained by compresses, wet in spirits, and by bandage) were lessened. The morning of the 6th day, his head-ach was very violent, but again abated, by a second bleeding at the nose, in which about two ounces were discharged. The 7th, and every morning, to the 12th, the head-ach returned, but rather slighter, and was regularly carried off by a slight hæmmorrhagy, from the nose. From that day, he had no complaint, but from the fore ; and about the middle of February, he returned to his service, quite well, and so has continued.

## C A S E VII.

PETER MEEHAN, aged 19, on the 17th of March, 1780, received some blows on the head, and a cut of an hanger on the upper part of the right parietal, which wounded the bone, but did not penetrate the two tables. He bled profusely on the accident, and I did not see him till next morning. The lad, though stout and strong made, yet, was of a pale complexion; and finding no indication for it, I omitted having him bled; but directed powders of nitre and jalap, to keep the body open. Things went on very promising for about seven days, when the appearances in the wound, began to alter for the worse; with an incipient œdematous swelling round the parts, and a slight sickness of the stomach. After dressing the fore, I had the side of the head covered by a compress, wet in a mixture of——

Rec. Sp. rorismarini unc. sex. sp. volat.  
arom. dr. tres m.

and

and to be refreshed every three hours. I, at the same time, prescribed the following——

Rec. Opii solidi gr. quatuor.

p. rad. ipecacuana, gr. nona.

p. cort. peruvian. dr. & semis m. &  
divide in chart. tres.

one of these powders he took that night, at bed-time, with a draught of light wine whey : he perspired, and urined plentifully, and passed a tolerable night. The fore looked better next morning, as were his spirits. He, however, took a second dose that night ; the swelling totally disappeared ; some light exfoliations followed, and he was well in the course of five weeks.

C A S E

## C A S E VIII.

NOVEMBER 18, 1780, Michael Ives, a stout, robust man, of about 35 years of age, recommended by Lord Kingsborough, was admitted into our Hospital. About twelve days before, he fell from a cart, head-foremost, on a large parcel of stones, and the consequence was, a large contused wound, on the superior and middle part of the left parietal: the bruised parts had, in the interim, sloughed off, and exhibited a wound of more than three inches long, and above an inch broad in many parts. In some parts of the wound, the pericranium was detached; in others, it adhered; in some places, puckered up, but every where, *quite black!* with this formidable looking wound, and scarce covered by a dressing, he presented himself, and seemed as careless and indifferent, as if nothing ailed him. He would suffer no evacuation, except a little opening physic. I paid great attention to the case, and watched the

the symptoms closely : the discoloured pericranium I saw evidently, proceeded from no pre-indisposition of the parts, but from the violence of the hurt, and an absolute neglect of dressing, or keeping the parts clean. The wound began to digest kindly ; the pericranium in a few days, was quite separated, and the skull assumed that fresh, reddish appearance, which prognosticated a new and speedy covering. Some slight exfoliations however took place ; and he was discharged, cured the 25th of January following.

I have selected these three cases, from a much greater number ; because, two of them exhibited as formidable appearances, as can be well supposed, of injuries done the pericranium ; and yet, it is evident, that the dura-matter in no shape partook of them ! In the first instance, to the injury done to the pericranium, there were added, the symptoms of a commotion of the brain, and, I think, almost to a certainty, of a rupture of some blood-vessels ; and yet, we see, it was not attended with any  
one

One sign of the formation of pus, on the dura-mater. The very great loss of substance, and black discoloured state of the pericranium, in the case of Ives, prove, that very violent dilacerations and *gangrene* of this membrane may happen, without the dura-mater being in the least injured; whilst, in the case of Meehan though the injury done the membrane was by an incisive instrument—the least likely to be followed by disagreeable consequences—yet, distant signs of matter, forming on the brain, began to appear, and probably would, in a few days, become very formidable, were they not so seasonably attacked.

When these cases are attentively considered; and when we shall peruse those that succeed them, in which the injury done the pericranium was not near so great, yet, followed by matter on the dura-mater, and by death; where shall we explore the cause, so ardently wished for? A little reflection, in my mind, will settle this whole affair, add *new dignity to the profession of Surgery*, and be the means of saving many lives!

If a person with a wound, an ulcer, or a fractured limb, the extent of which we can ascertain, has untoward symptoms : If the wound does not digest : if soft fungous fleſh ſprouts up, or gangrene appears ; we reſolve the ſymptoms into the habit of body, not into any latent injury, and accordingly attack it. To bring this reaſoning home to our preſent purpoſe—when a man receives a wound, or an hurt on the head, in which the pericranium is, or is not, engaged ; unattended with ſymptoms of fracture, or concuſſion, what are, and what ſhould be the indications ? certainly, no more, nor leſs, than to bring on a ſpeedy cure. If the patient is phlethoric, venefection is undoubtedly neceſſary, and to be repeated, as the ſymptoms require, and no more. Opening phyſic is alſo requiſite, with a regimen, adequate to the habit of body. Evacuants are by no means to be uſed indifcriminately ; and the ſores to be dreſſed in a light eaſy manner. But, ſhould it in ſome days aſſume a bad appearance, then, and *not before*, we are to have recourſe to ſuch means, as are moſt likely



likely to check its progress; but these, by no means, consist in powerful and repeated evacuations, so long recommended, and so unsuccessfully pursued, as will abundantly appear, by our proposed method of cure.

## CHAPTER

## CHAPTER IV.

A Selection of Cases, in which the general mode of practice in wounded pericraniums was steadily pursued, with their success.

## CASE IX.

IN June, 1768, John Bourke, a journeyman cabinet-maker, going home, in liquor, late at night, took hold of the bridle of a gentleman's horse, just setting off for the country, who was conversing with another. On this insult, (as he deemed it) he struck the man a severe blow of his whip, on the right parietal, and he directly fell, and the gentleman rode off, without thinking further of the matter. He was dressed at the Hospital, for some days, and finding no great inconvenience from the fore, he went regularly to his work. But the 10th day from the wound, he grew heavy and listless,

listless, with a sickness at stomach; this was succeeded in a few hours, by a severe shivering, as if in an ague fit, and a smart fever followed. The 11th, the fever encreased, with a kind of stupor; both of which were greatly aggravated the next day, when I saw him, for the first time, by particular directions of the offender. I proposed to the person, to whose care he had been committed, the application of the trepan, and a large blister to the poll; both of which were rejected; and he died the morning of the 14th. As a trial for life must be the consequence, I, in the presence of the chief magistrate and the jury, examined the wound, and then after a circular section with the saw, raised the roof of the skull, from below the wound. The wound was about an inch and an half long, and the cranium laid bare for this length, but no fracture! On examining the internal parts, the dura-mater was of a dusky black colour, for about two inches, under, where the hurt was received on the outside integuments, to the right orbit, *and detached from the cranium this whole length, but no where else.* No sign of injury to the bone ap-

peared either in its external, or internal surface. On opening the dura-mater, where discoloured, above two large table spoonfuls of a laudable pus appeared, lodged on the pia mater, which was the evident cause of his death.

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## C A S E X.

IN the end of November, 1769, Dennis O'Connor was admitted into our Hospital, for a considerable wound on the left parietal, by a blow of an hurl, in which the pericranium was engaged. The injury was received five days before, and the man had been twice bled in the interval. The wound was well conditioned, the discharge, moderate and kind, and he was exempt from fever, or any kind of alarming symptom.

He was, however, bled again, in about two hours after admission, and next day, took a laxative

ative mixture, which operated moderately. The fore was dressed with soft dry lint, covered with plaister and bandage, and he was up, and dressed, in his room or ward. On the evening of the ninth day, *from the hurt*; he grew low, complained of an heaviness in his head, and sickness at his stomach. This was succeeded by a violent shivering, followed by a rapid fever, which carried him off in two days. Curious to be acquainted with the cause of his death, we opened the skull, in less than two hours from his dissolution. The cranium was perfectly sound, over and under the wound, but the dura-mater, for the length of three inches, underneath the fore, and towards the orbit, was detached from the cranium, and covered with about two table spoonfuls of well-digested matter, which had passed from the pia-mater, through an opening in the former. The dura-mater was also of a dark brownish colour, for this extent, but no other remarkable appearance was exhibited in this case.

## C A S E XI.

A Servant to Mr. Westrop of Atty Flin, was in September, 1771, received into the Hospital, having been thrown from his horse, near this City, by which misfortune, his right thigh was fractured, with a large wound on the parietal of that side, in which the pericranium was comprehended. It need not be said, that in this case, large venesections, diluters, & a low regimen were strictly observed, because the fractured thigh alone, demanded such treatment. He nevertheless, the tenth day, grew low, complained of sickness at stomach, had rigors, and fever, and died the 13th.—It was debated, the morning of the 11th, to have recourse to the trepan; but the fever was so rapid, that we concluded, it would rather have hastened his death. The cranium was here also sawed through, soon after his death, and the parts underneath, exhibited exactly the same appearances, as in the case of O'Connor.

## C A S E XII.

IN the beginning of the following month, one Hallinan, a butcher, in a riot, received a blow of an hanger on the left parietal, in which the scalp and pericranium only were injured. It seemed for some days, of so little consequence, that he was mostly abroad; but the tenth day from the hurt, he became heavy, complained of sickness at his stomach, was seized with tremors, and fever. The 13th I was requested to visit him, for the first time, and, on consultation, recommended the trepan, which was directly applied. In the centre of the perforation, the dura-mater was visibly discoloured the breadth of a silver six-pence, and I recommended to have it opened, which, however, was not done. The next day, his fever and stupor very sensibly encreased, no discharge whatever came from the trepan, and he died the day after. But though I have mentioned a stupor, to attend all the preceding cases, yet,

I would

I would not have it understood, that a privation of the senses was the consequence. By no means; for all these people retained their senses and recollection to the hour of dissolution! In opening this young man's head, there was a considerable collection of pus, under the dura-mater, stretching towards the orbit, and this last membrane separated from the skull, and discoloured the whole length; but no injury whatever appeared to have been done the cranium.

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### C A S E XIII.

Mr. S. G. an Attorney of this City, happening to fall into company, with a wrong-headed fellow; a dispute arose, and he received a violent blow of a stick on the head, and soon after, fell into the area of an house—this happened late at night, on the 17th of March, 1773. I was called to him early next morning, found a large deformed contused wound; on the posterior and lateral part of the left parietal,



parietal, in which the pericranium was slightly engaged. I enlarged this wound, in different directions, the better to judge of the state of the cranium ; and by the consequential bleeding, to reduce the wound to a greater degree of simplicity. No appearance of fracture could be traced : he was soon after dressing, bled ; and powders of nitre, magnesia, and jalap, were given, in small doses, every two hours, with some of the saline julep, to promote the urinary secretions, and keep the body gently open ; and he was besides enjoined a strict low regimen. Towards evening, the whole head seemed a little inflated, and next morning, a considerable oedematous swelling appeared. As the head had been close shaved, soon after the hurt, to dissipate this swelling, I had the entire head covered by compresses, wet in a mixture of good brandy—for example, to an half-pint, I added half an ounce of sp. volatil. aromat. and I directed the powders to be taken so often, as to procure three or four stools in the day. As to bleeding, the nature of the swelling seemed to me, to preclude it. The 20th, the wound clean, and well-conditioned :  
 he

he was free from fever, head-ach, or any alarming symptom, as, indeed, he had been from the beginning. He was still kept low, and had this day five stools. The 21st, the swelling in the integuments, almost dissipated, and he complained of the severity of his regimen, and of his being confined to his bed, both which he thought unnecessary. The 22d, the wound made great advances to heal, and yet, through precaution, I judged another bleeding necessary, which, with much difficulty, was submitted to ; he was still kept low, and continued his opening cooling powders. The same regimen was strictly pursued, and he again bled the next day ; and, to satisfy him and his friends, of the prudence of this practice, I mentioned cases, which, like his, went on very happily for many days, and yet, terminated in death, most probably, for want of such precautions. Things went on happily to the 29th, and he up and dressed, for four days before. On dressing that morning, something in the appearance of the wound, did not please me. It appeared not so florid, nor the advances to heal, so much as might be expected from the preceding dressing.

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It was, however, so little, that a less accurate observer than I, might let it pass. About two hours after, he was attacked with an head-ach, sickness at stomach, and puking followed some time after. At two o'clock, he was seized with violent shiverings. I was then sent for, but being otherwise engaged, did not see him till four, when I found him, though up, attacked with a smart fever, for which he was plentifully bled, and a glyster thrown up in the evening. The 30th, the fever no way abated, and I desired Surgeon Mahony to be called in, assured, that matter was forming under the skull. On pressing with my finger, round the orifice of the fore, some matter pushed forward, and seemingly from some distance. I directed my probe to this sinus, and at about an inch and an half from the wound, and near the longitudinal sinus, I felt the cranium bare. I directly laid the parts open to this place, and scalped there, but found the skull free from injury. I must remark also, that this day, the fore was sensibly paler, and the probe could pass freely through parts, two or three days before, very firm. This appearance of matter, with the  
scalping,

scalping, and a large bleeding, we hoped, might abate the symptoms. The blood was highly buffed, which it was not before ; and, in the evening, he got a decoction. The fever, however, continued ; and next morning, the cranium was bare a little further, to which I extended the incision ; but the skull was very firm. He complained of a stiffness, pain, and swelling in the neck, and of a very violent pain inwardly, from the centre of the wound, towards the left eye. A new appearance this day, made the application of the trepan be again delayed. On pressing round the integuments, above a table spoonful of a thin oily matter, poured into the fore, and this being deemed a kind of metastasis, it was hoped that the fever, and other symptoms might lessen by it. He was again blooded, and took a decoction. April the 1st, the pain in the head, and towards the eye removed, and the stiffness and pain in the neck greatly abated, and these were made a further pretence, for delaying to trepan ; but the fever was still rapid. The application of the trepan again proposed, but put off. The 2d, the fore put on a better appearance, he passed the

the

the night more composedly, but the pulse still continued quick, though much lower. The 3d, some more of the oily matter already mentioned, was pressed into the fore, the pulse still quick, but lower; about two o'clock, seemed dozed and stupid, and breathed very shortly, but nevertheless, very clear in his intellects. That night, he grew visibly worse, and died about 12 o'clock next day. At two, I opened the integuments, and sawed round the skull, and laid the parts bare for inspection, in the presence of the Magistrate, and a Jury assembled for that purpose; but whilst I was with an elevator, raising up the cranium, the stench that issued from within, was so intolerable, that they all quitted the room, and I was obliged to have the windows opened for pure air. I found the inside of the bone daubed with yellow matter, but upon washing and cleaning it, could perceive nothing that could indicate the smallest injury done to it. The dura-mater, exactly under the wound, and extending to the left orbit, was thickened of a brownish yellow colour, covered with the same foetid matter, and easily broke through by the probe, the whole

whole extent of the diseased parts. Between it and the pia-mater, more pus was lodged, and it appeared to me, that the matter between the dura-mater and cranium, had passed through a natural opening, caused by the inflammation and pus.

The sensible Surgeon, after perusing this case, will naturally ask, why I did not trepan my patient, on the first appearance of the symptoms, having so many preceding instances, to justify the necessity of this practice? I called in another Surgeon, with no other intent: I have detailed the reasons, that caused the operation to be delayed: his friends seemed averse to it: a trial for life, was to be the consequence of his death; and, if I persisted in my resolution of trepaning, it might be insinuated, if not successful, that the very operation caused his death. It was not very long before this, that such a report was propagated, on another occasion. Two notorious rioters, (soldiers) in company with others of their fraternity, carrying their side-arms, came into a beer-house, in the most public part of this city, demanding liquor. The

rooms were filled with different people, regaling themselves, after the day's hard labour ; so that they could not be served with liquor ; nor did the publican wish to see such gentry resort his house. A scuffle ensued : the man of the house, and his wife were struck ; the different companies insulted, and some of them wounded. One poor fellow, in particular, was most cruelly treated ; and amongst other hurts, he received on his right elbow, (thrown up to cover his head) a wound of a back-sword, which extended about three inches on the side of the humerus, and wounded both radius and cubitus, at their articulation with that bone, so as to want little of a total division of the parts. In this condition, the man was brought to my house, and after dressing, and considering the case a very desperate one, and that the lives of three people were interested in the event—that the patient was very poor ; without knowing any thing more of him, I, as a Governor, put him into the Hospital, and charged myself with his attendance ! though the case was a very desperate one, yet, I hoped to be able to save his life, and even limb too, (as experi-

ence, both before, and since has proved) provided I was assisted by a good habit of body. This happened not to be the case; and though I invited the Surgeon of their regiment to attend the dressings, and had, besides three different consultations on him, in the last of which, it was agreed to amputate, which I reluctantly complied with, as the bad condition of the fore shewed, that a more formidable one, could not help to make things better. The man died, and it was industriously whispered about, that delaying amputation was the cause of his death. The two murderers were nevertheless condemned by their country; but they were pardoned by Government. Indeed, this tenderness for the military, at such a distance from the Capital, will not seem surprizing, when it is recollected, that, even *THERE, and, under the eyes of Government*, they have twice, and at no great distance of time, in the middle of the day, broke open the prison of Newgate, with impunity, by which means, ruffians of all descriptions were let loose on the public !

## CHAPTER



## CHAPTER V.

Signs of the formation of matter on the brain.

Disorders of this class, generally fatal—the general mode of treatment, to the last degree, improper—A new method of practice strongly recommended,

**T**HE Diagnostics of this disorder, I think may be collected from the cases already described. We will, however, bring them into one point of view—When a person receives an injury on the head, with, or without, a wound of the integuments; without stupor, or loss of sense—But (supposing these to happen at the instant, which disappear very soon after)—free from fever, or other alarming symptoms: if he, in the course of eight, ten, fifteen, or even twenty days after, should suddenly be attacked with nausea and puking. If the fore, (if any such) from well-conditioned, should assume a more languid appearance, becomes pale, the pe-

ricranium detaching from the skull; if horrors and rigors should come on, with a smart fever, pain in the head, and stiffness of the neck, I deem them certain signs of matter being formed on, or *under the dura-mater, on the brain itself, or in its ventricles*. But, to me, the most univocal signs appear to be, the wound's growing suddenly less florid, œdematous swelling of the integuments, sinuses forming, where none appeared before, the pericranium loosening with tremors and fever.

As to the prognostic of this disorder, it must be to the last degree unfavourable. The five recited cases, of matter formed under the skull, ended all fatally, though in them, the most generally adopted practice was pursued, except not trepaning, but in one instance. In eleven cases, related by Mr. Dease, \* in a very sensible Treatise, lately published, in which, matter was collected under the cranium, and, in ten of which, the operation was performed, one only recovered. Of five cases, given by Le Dran, †

\* Observations on wounds of the head.

† Observations de Chirurgie, T. I.

in which matter was formed under the cranium, they all died, and so in proportion, in other writers.

## C U R E.

IF bleeding, and the other evacuations, so strongly recommended, and so steadily pursued in all the above cases, could, in any degree, prevent the formation of matter on the brain, or on its membranes, no doubt, but we should have more instances of the success of this practice. They in no shape answered the end proposed. They neither prevented the access of tremors, head-ach, and fever; nor when these attacks came on, did they in the least yield to these remedies! these are incontrovertible proofs, which must convince every man of sense and reflection, that this mode of treatment, so highly recommended from all antiquity, and so religiously adhered to, to this day, must be defective. Let me consider this whole matter, *not as a servile copyist and imitator, contributing to transfer errors from age to age, but as a*

*man of science, an adept in his profession, whose motto is, Nullius addictus jurare in verba Magistri !*

In all acute cases, the pulse and symptoms are to be the physician's guide. He will not treat a man for a slight cold, with the same severity, as if for an inflammation on the lungs, though such complaint may be the precursor of the disorder ; nor slight pains in the limbs, like an inflammatory rheumatism. A common ophthalmia will be treated very differently from a chemosis, notwithstanding that it may degenerate into one. In short, it is only the aggravation of the symptoms, that directs the prudent practitioner. To bring these reasons home to our present purpose. Two men receive wounds on the head, with hurt to the pericranium in each. The injuries are nearly similar. The one is treated according to all the rules of art, as was the case in the preceding observations. The other gets his head dressed once a day, or, perhaps, once in two days, at an apothecary's, eats and drinks, and follows his usual occupation. The first, in ten or twelve days,

in

in spite to all precautions, is attacked with symptoms of extravasated matter on the brain, and, to the disgrace of physic, dies ; whilst the other, perhaps, gets quite well of every complaint in that period ; all these evacuations, with a severe regimen, having neither prevented the attack, nor lessened its violence, when it appeared !

This mode of treatment appears then highly exceptionable. But what is the object proposed by it ? To prevent the formation of matter on the brain, which in numbers of instances, without such aid never happens. Because, in bad habits of body, a slight wound, or contusion, is attended with alarming—often with fatal symptoms—does it follow, that in every injury of this kind, active stupes and poultices, high diet, cordials, and the bark, are to be brought in, to aid nature ? surely no ! But if it shall appear—and I think it will appear, that these profuse evacuations, rather injure, than serve the cause for which they are intended ; will not this be still a stronger reason to reject so pernicious a practice ? that this is the case,

the

the following reasons and facts, will clearly evince.

In all hurts of the head, which terminate in matter, on the meninges of, or in the brain itself, some, or in general, all the following appearances occur in some days after the hurt.—An œdematous swelling of the integuments—the wound grows paler, the surrounding flesh soft and lax; the pericranium loose, and easily detached from the skull; shiverings and fever, &c. These on the very appearance of them, exhibit no proofs of inflammation; and the shivering in particular, proves it to be a translocation of matter, a metastasis only; because such symptoms never precede inflammation. That this is the case, we will still more readily acknowledge, when we reflect, that in two or three days after the access of the fever, the patient often dies, and on dissection, matter is formed on the brain, which it is not easy to conceive, could happen, in so short a time, especially in such a place, was this matter the consequence of inflammation. But a point worthy the greatest attention is, that extravasated matter,

following

following hurts or wounds in other parts, produce fimilar fymptoms ; and Surgeons of eminence diftinguifh in thefe cafes, them into *primary* and *fecundary* ; that is, that if in fome days after the injury, when the ufual fymptoms immediately attendant have fubfided, and new ones appear, fuch as *sicknefs at ftomach, puking, fhiverings, fever* and *inflammation* ; all thefe are noted as confequences, of the extravafation.

But it may be objected—and fomething like it has been advanced, to fupport this doctrine—that fuppuration on the dura-mater may happen, with no great degree of fever or inflammation. But as it is a fubject, highly interefting to mankind, and that, as I have no other objects but truth and this in view, in the prefent inveftigation, I fhall produce fome cafes in point, to this queftion.

\* M. Petit dans les Mémoires de l'Académie de Chirurgie, T. I. and 4.

## C A S E XIV.

PATRICK FITZGIBBON, Brogue-maker, presented himself at the Hospital, the 2d of November, 1779. An abscess had formed on the upper part of the os frontis, near the longitudinal sinus. It had broke two days before, and on examining, I found the skull bare, for an inch and an half in length, and nearly an inch broad, reaching to the parietal bone. On dilating the wound, an opening appeared at its inferior part, and through it, the dura-mater was seen, covered with yellow pus, and in plenty. I absorbed with soft lint on a probe, a good deal of this matter, and removed about half an inch of the integuments, so as to have a fair opening to this cavern. I found the denudated part of the bone pretty loose, through this extent, and introduced between the dura-mater and it, some pledgits of lint, secured by thread, as well to absorb the pus, as to assist in separating it from the sound parts. I wanted him to come into the Hospital, but he declined it;



it ; but I charged him to attend every morning, and on the spot, took a note of his lodging, to enquire after him, in case he did not appear. He attended diligently every day ; and for some time, not less than a table-spoonful of matter discharged from the dura-mater, at each dressing. By gently moving the bone from side to side with a forceps, it became so loose, as by the 12th, to separate entirely. It was an inch and an half long, and about an inch broad, and very thin, honey-combed and jagged, in its inferior or internal part. From this place, another separation had been forming, towards the forehead, of above an inch in length. I removed about half an inch of the loose integuments ; so that the outside wound, was not near so extended, as the injury of the bone. In eight days more, this last piece also came away, both which I have preserved. The bare dura-mater, through this whole extent, was lightly covered with dry lint only ; and I had a tin plate, lined with baize, which he wore over the dressings, and under his wig. The discharge from the dura-mater lessened every hour. The quantity of lint was lessened from  
day

day to day ; in a short time, the preserved flesh adhered to the dura-mater ; nothing remained to dress, but the uncovered part ; and he was in a manner quite well, by the end of the month.

The account he gave of his case, was the following. About four months before, he was attacked with a pain, exactly over the diseased part, which gradually encreased, with a throbbing, so as to be often scarce tolerable. He declared, to his knowledge, he never received any hurt whatever, on his head. He continued in this melancholy situation, seldom able to follow his occupation, till a few days before I saw him ; when an abscess forming on the head, gave him the first relief. During his cure, he never failed being every morning at the Hospital : he took no medicine, and seemed to regard it no more, than as if a common sore.

Here the dura-mater was, to demonstration, in a state of suppuration. It was attended with no shiverings, that I could learn, nor any remarkable alteration in the integuments, till about a fortnight before he came to the Hospital ;

pital; and it must be owned, that the efforts of nature, in this case, were astonishingly great. In Chapter the 18th of this work, the reader will see two cases of concealed fractures, where the pus formed on the dura-mater, made its way through them, and the pieces came away, —He will there see, that whilst this pus was forming, head-ach, fever, and delirium, were its attendants, without shiverings; and that when this matter was formed, the symptoms gradually subsided, and died away entirely with the free exit of it. After these examples, will it be said, that matter may be formed on the dura-mater, without a previous fever and inflammation? if he does, he will find three cases in the Memoirs of the Academy of Surgery, of nearly a similar nature. \* In that related by M. Soulier, the pain, fever, and inflammation, preceding the formation of pus, were extreme.

The matter that forms in the brain, or on its meninges, some days after a hurt, attended with the symptoms described, is certainly a

\* Surgery, vol .I, p. 9.

translation of pus, from some other part, not the consequence of inflammation : and every experienced Surgeon knows, that a white swelling in the knee, for instance, an empyema, or considerable collection of pus in any part, without previous pain, inflammation, or discoloration of the skin, is generally attended with the most alarming symptoms, and requires the utmost knowledge and abilities, as well with regard to internal remedies, as to external application ; and that the opening of them alone, is seldom successful.

These facts established, we shall now propose a *rational and manly method of cure*—I suppose a man with a considerable wound on the scalp, in which the pericranium is laid bare, applies on the accident to a Surgeon. Were it to me, I should treat him exactly thus. If the wound was contused, and hollow over or under the pericranium, I would certainly enlarge it; but if with a cutting instrument, I would not; as when inflammation subsided, the parts would spontaneously coalesce. I most certainly would have him plentifully bled, and in the jugular vein,

vein, or temporal artery, for choice. But, if the patient was low, or sunk on the accident, I would positively interdict every evacuation, till *the state of the pulse* should prove it, in some measure, justifiable. This should be succeeded by laxatives—powders of nitre and jalap--E. G. three dr. of nitre to one of jalap, divided into twelve papers, of which, one may be taken every three or four hours, would gradually answer all the effects we could wish, from this operation. If no symptom, that indicated evacuations, after this appeared, none should be attempted; the wound should be dressed, according to art, and a moderate, not a severe regimen as to diet should be directed. As soon as appearance of fever and inflammation (if any) disappeared, I would direct powders of bark, with valerian and castor, to be taken three times a day, in orange-peel or camomile-tea. Every one knows the bark to be a powerful bracer, and the valerian and castor, are powerful antispasmodics; so, that attention being thus paid, both to the state of the blood and the nerves, slight deposits may, by this means

means be prevented, and more considerable ones lessened.

But, if after all, the symptoms of matter forming under the cranium, should appear, or, what may be properly enough called the SECONDARY SYMPTOMS, then must another method be pursued. My highly esteemed friend, Mr. Bromfield, Surgeon to her Majesty, and to St. George's Hospital, has, I think, considered this matter in a very proper light. ' In concussions of the brain, (says he) \* do we not, from certain symptoms, often suspect, either obstructions in the capillaries, or *extravasation* of some of the circulating fluids ; and, in order to prevent mischief, is it not the warranted practice, to bleed and evacuate *usque ad deliquium* ? Is not this repeated, if the symptoms continue, till death convinces us, that this method will not ALWAYS succeed ? Should any man recommend a free use of opium, so as to produce a diaphoresis, in a concussion of the brain, would he not be thought either ignorant or insane ?" But though my

\* Tom. 2. p. 44 to 53.

amiable friend seems here to recommend this new practice, in concussions of the brain and fractures, yet his words manifestly shew, that his chiefest reliance on it, is in *extravasations*. Hear again, what he says—‘ That opium is al-  
 ‘ so a great attenuant of the blood, few will de-  
 ‘ ny ; and therefore, that it must give the fair-  
 ‘ est chance *for the absorption of extravasated*  
 ‘ *fluids*, and by dividing these detained in the  
 ‘ vessels, fit them for future circulation.”

Opiates mixed with emetics, form a most powerful diaphoretic, and exert themselves in a most remarkable manner, in relaxed habits, where the secretions are not well carried on, and where deposits are forming in consequence. To this purpose, I have used them, with surprising success, in leucophlegmatix, and even in confirmed dropsies ! Every practitioner knows, that in these disorders, the secretions, both by the skin and kidneys, are extremely languid, and that urine in particular is discharged in very small quantities. Yet, I have seen, where a single powerful dose of *these*, properly blended, has produced in one night, a

F

profuse

profuse diaphoresis and a greater evacuation by urine, than would in ten days happen without their use! *in short, in several instances, they have produced a radical cure!* I have, with like success, used them, in attacks on the bowels, where every other remedy had failed.

From what has been said, it is easy to see, that in disorders of the present kind, when we are certain, that matter is forming on the brain, I would warmly recommend medicines of this kind, and particularly DOVER'S POWDER.\* Indeed, I am so fond of it, that as it is seldom known, or prescribed in shops; I have always a quantity of it by me, ready prepared. This medicine, which is called *Dover's Sweating-Powder*, has for its basis, opium and ipæcacuana, and is a powerful diaphoretic. As soon as ever any of the SECONDARY SYMPTOMS appear, I would give a dose of this, e. g.

\* DOVER'S POWDER.—Salt Petre, and tartar of vitriol, of each four ounces,—let them be stirred together in a red hot mortar, till they have ceased flaming—then powder, and slice in, opium an ounce, ipæcacuana and liquorice aa an ounce—rub to fine powder—Dose, from 40, to 60 and 70 grains, at bed-time.

from



from 10 to 25 grains, and would endeavour to keep up the diaphoresis, by what Mr. Bromfield calls his *tinctura Anodyna*, which is——  
*℞. Vini antimonialis drachmas tres, tincturæ thebaicæ drachmam. M.* from six to sixteen, or even twenty drops may be given, in some hours after the powder, and repeated in six hours—whilst this is doing—if not already done—I would have the head close shaved, and chafed with the following——

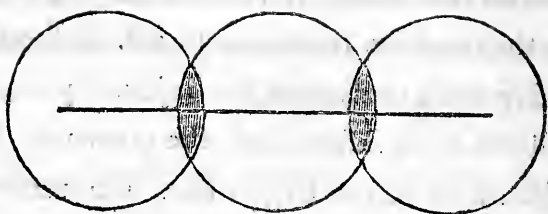
*℞. Sp. rorismarinæ unc. quatuor, sp. volat. aromat. dr. tres, camphoræ scrup. duos M.*

After fomenting for some time with this, the entire head (the injured parts excepted) should be covered with the *templastr. calid.* spread on strong linen, and a large blister applied to the pole and neck. The intent of these topics, it is clear, are meant to correspond with the internal process, to absorb or divert the tendency of matter to the brain—should the fever rise still higher, with a full, hard pulse, blood should be taken, but from the temporal artery, or jugular vein only. If in opposition to all our endeavours, the symptoms should

not *sensibly lessen* ; in the course of 24 hours *at furthest*, the trephine should certainly be applied ; as an attack of this kind is too serious and sudden to be trifled with—But, previous to the operation, the friends of the sick should be fully informed, of the end proposed by it—that it is not to raise a depressed bone, because no fracture exists, but to give issue to matter, formed under the skull. That experience has shewn, that this matter has been as often diffused over different parts of the brain, and sometimes in its substance, and in its ventricles as on the dura or pia-mater, of the injured part ; and, though, therefore, it is an operation absolutely necessary, to give a chance for life, yet, after all, the matter may be out of reach. This secures the operator from censure, in case it should happen so, and still preserves the credit of the operation.

In trepanning, Surgeons in general are too free of the knife ; for the greater the denuded surface, the longer will the process of healing be, as well as the danger of the patient. In the present case, as giving issue to mere  
matter,

matter, is the object, the wound of the integuments, if necessary, should be managed with the greatest œconomy, nor made larger, than to give the trephine free room to act. It should be exactly over, or as near the injured part, as is consistent with safety, and the crown to be used, should be of the largest size. On removing the piece of bone, if pus appears in view, or the dura-mater is of a thickened yellow, brown, or darkish colour, and a little elevated, we may be assured, that it is diseased, or that pus is lodged under it. In either case, it is recommended, to open with a lancet; but this I would not attempt, except it were done effectually. In order to do this, I would, without loss of time, apply a second, either higher or lower, or, according to the direction of the complaint; but, in doing this, I would comprehend a small part of the perforation in the last, and, if necessary, a third, in this—but the reader will at once comprehend what I mean, by exhibiting on paper, the circle of the trephines.



By this manner of operating, there will be much less loss of substance by three crowns of the trephine, than by two, in the common way; and the Surgeon will have the opportunity of making a free and proper opening of the dura-mater, which could not be so well done by distinct openings; and every man of profession knows, that a large aperture, in these cases, is infinitely safer, than small punctures, which can only be made by such means. If the dura-mater appears discoloured, and that on opening, no matter presents itself, we should not be discouraged. The necessity of it is apparent; and this very opening may assist in absorbing the matter. But if the dura-mater appears

appears

pears in a sound state, it should not be molested, as from it, we must conclude the matter beyond the reach of the lancet, and the only remains of hope left; must be, from a steady pursuit of the internals.

I must not however omit mentioning, that cases similar to these have occurred, in which, had apertures been made deep into the brain; matter would have been discharged, to the recovery of the patients, in all human probability. Of this, we can be enabled to form a judgment with some degree of probability, by continuing the trepan, as in cases, where the dura-mater is visibly affected. So that where the symptoms of extravasation are *clear*, and no relief is procured, in some hours after a single perforation, I would certainly repeat it, and even pierce into the brain, but as the last resort. \*———.

But, however beneficial the process here laid down appears, where symptoms of extravasation or pus become manifest; yet, in concus-

\* Vide mem. de l'Academie de Chirurgie, Tom. 2. p. 138—9, &c.

fions of the brain, it is a practice, which I would by no means recommend. And, here let me observe, that Mr. Dease seems not to have attended to the operation of diaphoretics of this class, when he complains, that though 4 grains of opium was given in a dose, yet it did not procure his patient any refreshing sleep, I have given it in a variety of cases, many years before Mr. Bromfield favoured me with a copy of his work—Not in some instances, *Dover's Powder*, but one of the same genus, and, indeed, more powerful, namely, opium, mixed with turpeth and ipecacuana, to the quantity of three and four grains of opium for a dose ; and its effect mostly was, a violent sickness at stomach, and puking sometimes, followed by a profuse diaphoresis, and in many instances, with some purging stools. The relief it procured was, by its effects only, and Mr. Bromfield has not once hinted, in the cases he has given, that it acted as an hypnotic or sedative.

## CHAPTER

## CHAPTER VI,

Of the Hydrocephalus, caused by external injuries, with its symptoms ;—Of internal hydrocephali, and their causes,—Method of cure, in both instances.

THE Philosopher seated in his study, who, with placid and conscious dignity, contemplates the extent of his knowledge and acquisitions ; and who, with little labour and trouble, becomes as intimately acquainted with all Nature's operations, and laws in the macrocosm, as if the Almighty had consulted him in the formation of our globe, and of the celestial bodies ; will, no doubt, look down with contemptuous pity, on poor Surgeons, so shamefully ignorant, even of our microcosm, as by uncommon study and observation *only*, to creep from one degree of knowledge of it, to another. But let us not envy, but rather admire these

these men of science ; for since they have *demonstrated*, that a *finite body*, or a body circumscribed by length, breadth, and surface, may be divided *ad infinitum*, we must conclude, that they, though limited by length, breadth, and surface also, are capable of easily comprehending illimitable things !

The young physician, a complete master of the most received physiology, and of the newest mode of practice, founded on this doctrine—Can he, expanded with so much science as he is—who is intimately acquainted with the causes of respiration, of the blood's circulation, &c. and of the mechanism, by which these effects are produced, and of course, of every possible disorder, to which they may be exposed, as well as its cure.—Can he, I repeat it, condescend *afterwards*, pitifully to explore close-stools and urinals, watch symptoms and effects, keep diaries of cases, &c. in order to acquire some small degree of knowledge of but a minute part of that great whole, which he was early in life, so great a master of ? He cannot ; and this is the reason, that Surgery has  
made



made larger strides to perfection, within this century, than *Phyfic* has *ever done*, or, than in all human appearance it *ever will do*, unless—*happily for mankind* !—some different mode of study is chalked out for the young Physician. The Philosopher enjoys his boasted system. It is true, it has no relation whatever, to these immutable laws established by the Almighty ; and the works of nature go on invariably and uniformly the same, whatever the weak, ridiculous opinion of men may be. The Philosopher, like the insane, is happy in his opinions : they injure no one, and I shall not attempt to make him unhappy, by undeceiving him ! But the medical hypothesis is truly dangerous, because practice is warped to it ; and the miserable sick often becomes the sacrifice—But from this digression.

That amongst the various complaints, produced by injuries offered to the head, an hydrocephalus should be one, has not, as far as I know of, hitherto been noticed ; and yet, it appears to me, to be a disorder, that occurs of-  
tener

tener than we are aware of——here follows the case, that gave rise to this enquiry.

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## C A S E    X V.

DECEMBER the 6th, 1769, I was requested by Dr. Barret, then Mayor of this City, to accompany him, and open the skull of a stout boy, of about 18, dead about two hours, and whose death it was alledged, was the consequence of a blow of an hammer on the middle of the left parietal bone, received about three months before, from a smith, and for which, at the time, informations had been sworn against him. On the instant of percussion, he was deprived of sense and motion, but in little better than half an hour after, he recovered both. As there was neither wound or fracture, and that the strength and spirits of our people, often carry them through most violent hurts of the head; the friends of this boy, made, for  
some

some time, little account of the accident. He, however, began visibly to droop and languish. He complained of an heaviness in the head, with vertigo, sickness of stomach, and decay of appetite. The weight of the head increased, his sight became weaker, but particularly in the right eye. The surface of the head enlarged from day to day, but without any swelling of the integuments. The heaviness and weight of the head, compelled him at length, to take to his bed ; he became gradually more and more emaciated, and a fortnight before his death, he lost the entire sight of the right eye. This was the exact relation given me of his case, which I noted down on the spot ; and the present enquiry was, to know, if his death was the consequence of the stroke.

The dimensions of the head were visibly enlarged, to a considerable size, but the fleshy parts were exempt from any kind of swelling ; and, to the touch, the bones of the skull seemed very thin. No external appearance could point out the injured parts ; and in separating  
the

the scalp, by a crucial incision, the cranium was free from fracture, or sign of hurt. It felt, however, through its extent, uncommonly thin, but particularly, both parietals, which yielded to a very light pressure of the finger. I sawed round the skull; and in raising the cranium, the adhesions of the dura-mater to it, were but inconsiderable, except at the futures; and even there, not near so firm, as in many other cases. The skull was unusually thin, considering so stout and strong a boy, as by all accounts he was; and in many parts, but particularly on both parietals, *not thicker than royal paper*! the vessels of the surface of the dura-mater were very full and distended, such as we often see the veins on the belly of hydro-pics. On opening this membrane, the cause of the uncommon distension of the cerebrum, appeared to be, a large collection of yellow inodorous water, which had insinuated itself into the ventricles, and through the whole surface of the cerebrum, which in many places, was sensibly melted down, and lost in it. The above allegations being proved by oath, before the inquest, I did not hesitate pronouncing his death

death to be the consequence of the stroke, and the smith absconded, and has not since been heard of.

A case so remarkable, I suspected, could not be a SINGLE ONE ; and had it appeared so, I should hardly have introduced it, in a general Treatise like this. On enquiry, I have reason to think, that many such have occurred, but for want of sufficient accuracy in the relators of them, have been over-looked.—It is recorded by Rohault, \* ‘ that a child of nine years old, ‘ having fallen (I suppose, from some height), ‘ on its head, complained of great pain in the ‘ part. The face and head gradually swelled, ‘ a continual fever followed, with *loss of sight*, ‘ and numbness of the extremities, which ended in an apoplexy, of which the child died. ‘ On removing the scalp, a quantity of water ‘ followed on the instant, and about the arteries were many hydatides, some like *atheromæ*, others like *steatoma*, and *meliceris*, ‘ which was the more surprizing, because these ‘ last are found, mostly near the veins. On the

\* Traite des Playes de Tete, p. 85—6.

‘ right

‘ right side of the temple, was a small crack in  
 ‘ the coronal bone. On sawing the skull, no in-  
 ‘ flammation appeared on the membranes of  
 ‘ the brain, but some water was lodged in its  
 ‘ substance, which was decayed. The optic  
 ‘ nerves were larger than usual, and so weak-  
 ‘ ened, that they broke on the slightest touch.”

This case, on the face of it, it must be admitted, was an hydrocephalus, arising from the injury received by the fall; and though no time is marked from the instant of the accident, to its fatal catastrophe, yet, we may conclude, that it comprehended in the whole, nearly the same time, as the preceding one. There are, however, these differences between the two cases: in the first, the integuments were free from swelling; whereas, in this, we are told, that on raising the scalp, a good deal of water burst forth, and no notice is taken of the state of the bones. For my own part, I should be apt to conclude, that this first water did not proceed from the integuments, but from within the skull; and that the Surgeon in dividing them, might cut through the bone,

which,

which, in the dissolved state, I must suppose it to be in, might easily happen, and so give sudden vent to this quantity of water.

As the case is not accurately told, this conjecture seems to acquire no degree of certainty, as it is *ever known to be*, not water in the scalp, but on the brain itself, that causes blindness, especially the *amaurosis*. We have another case, in the same work from Bonetus. \*

‘ A woman, who received a blow on the  
‘ sinciput, complained of *vertigo’s* for an entire  
‘ year, which terminated in an apoplexy, of  
‘ which she died. On opening the skull, on  
‘ the left side of the brain, was found a tumor,  
‘ as big as an hen’s egg, filled with a clear  
‘ water, which pressed in part on the third  
‘ ventricle.’

As these two instances are related by Rouhault, as the effects of injuries done to the head, it is clear, that they cannot be resolved into any other cause ; and I think, that if they

\* Sepulcretum, T. 3. p. 319.

had been more minutely and clearly narrated, they would, with very little difference, appear as full as the first.

In the Memoirs of the Academy of Surgery is related a case, which, I think, comes very clear and full to the present point. \* ‘ The daughter of an ordinary-keeper, at Befançon, was attacked with an head-ach, which, at first, was but trifling.’—The cause of this complaint is not mentioned ; but, I think it beyond a doubt, that it must proceed from some external injury.—‘ The pain encreased to such excess, in two months, that she was obliged to apply to a physician, who, during the course of six years, tried the most powerful remedies, to no purpose. M. Vacher was consulted, and arterio-venous performed to little effect. After this, we are told, that a crucial incision was made on the sagittal future, and the bone rasped over this future, with little relief. She was after this trepanned, but there was neither collection on, nor in-

\* Tome 1. p. 375—6—7.



‘ inflammation of the dura-mater. It seemed a  
 ‘ little elevated, and was therefore opened, and  
 ‘ all this, with no kind of advantage to the  
 ‘ sick. She died the eighth day from the ope-  
 ‘ ration. Her head was opened, and three fun-  
 ‘ gusses, the largest of the size of a PEA, arose  
 ‘ from the cortical substance of the brain,  
 ‘ and were attached to the dura-mater, which  
 ‘ was very thick here, but the bone on the con-  
 ‘ trary over it, WAS AS THIN AS PAPER.  
 ‘ The superior ventricles were FULL OF WA-  
 ‘ TER, and the third, filled with black thick  
 ‘ blood, &c.’ There is something exceptiona-  
 ble in the anatomical account of this case,  
 especially of the three fungusses, the largest of  
 which, we are told, was as big as a PEA. I  
 venture to make this remark, because it is  
 clear from the relation, that M. Vacher was  
 not present at the dissection, but related it, such  
 as he was told ; but the *thinness* of the bone,  
 and the extravasated fluid, were circumstances  
 too striking to be here omitted, especially, as  
 we are endeavouring to throw new light on a  
 very obscure, and a very interesting subject.

In the fourth volume of the *London Medical Observations*, are some remarks, highly worthy attention. Dr. Watson relates the case of a girl, six years old, brought to town, for his advice.

‘ Nine weeks before, in running, she fell, with  
 ‘ a SMART stroke of her head on the floor. As  
 ‘ the contusion that followed, soon disappeared,  
 ‘ it was thought no more of, and she was sent  
 ‘ to a boarding-school. In about a fortnight,  
 ‘ she began to complain much of her head,  
 ‘ which encreased for about six weeks, when  
 ‘ she was sent for home. On her coming to  
 ‘ town, the person who took care of her, frequently observed great paleness in her face,  
 ‘ and convulsive motions in her eyes and lids.

‘ An Apothecary had given her at times,  
 ‘ supposing it a worm case, calomel, emetic  
 ‘ tartar, saline draughts with nitre, and a blister was applied to the back, which discharged well; nevertheless, her complaints,  
 ‘ particularly the disorder in her head grew  
 ‘ worse. When the Doctor saw her, she had no  
 ‘ fever, her pulse were feeble, irregular, and  
 ‘ beat

' beat about 84 strokes a minute. Her eyes look-  
 ' ed very heavy, the pupils were *considerably dilat-*  
 ' *ed*, and when not in a state of stupidity, she was  
 ' continually crying out, OH, MY HEAD ! She  
 ' had frequent fits and puking. Blisters to va-  
 ' rious parts, and medicines of different kinds  
 ' availed little. The recited symptoms encreas-  
 ' ed, she became QUITE BLIND, her pulse  
 ' quickened to a great degree, she was con-  
 ' vulsed, and died on the sixth day, after his  
 ' first seeing her.

' As an hydrocephalus was suspected, the  
 ' head was opened, and in the cavities of the  
 ' brain, between 4 and 5 ounces of a perfectly  
 ' clear and scentless fluid was found, the  
 ' greatest part of which, was contained in the  
 ' ventricles. No water was found, between  
 ' the skull and membranes, between the dura  
 ' and pia-mater, or between this and the brain ;  
 ' but there was water in all the cavities, and  
 ' not less than half an ounce in the fourth,  
 ' which is worthy attention, as in a sound  
 ' state, there is seldom found more than as  
 ' many tea-spoonfuls in the whole 4 cavities.'

That these direful symptoms, were the effects of the hurt on the head, will I believe now hardly be doubted. The symptoms, in every particular, were so similar to the case I related; coming on gradually, and encreasing as the disorder gained; the *loss of sight*, &c. and had the state of the bones been also narrated, it would, perhaps, appear in every particular the same. The Doctor himself, seems to lay some stress on the hurt of the head, as a probable cause.—‘ I do not take upon me (says he) to determine, what share the striking her head against the floor, by the fall above-mentioned, had, *in creating this disease*, and in *occasioning the great extravasation of fluids, in the ventricles and cavities of the brain*, which could not be ABSORBED by any medical process, that I am acquainted with.’

He relates two cases more, with almost similar symptoms. One was not suffered to be opened; but in the right ventricle of the brain of the other, was found, more than 3 ounces of a clear fluid. In both these cases, he remarks, no previous fall or blow was given, which  
could

could in the least seem to contribute to the formation of this distemper. For my part, I strongly suspect, that most *hydrocephali*, which happen after the first or second year, are the consequences of injuries received on the head, not original disorders. The carelessness of servants often exposes children to the greatest calamities, and provided they are such as may be concealed, they are little attentive, as to the consequences. If a child receives an hurt in the head, which they are most subject to, on account of frequent falls, the nurse or servant carefully conceal it, whatever light, it may afterwards throw on subsequent symptoms.

## DIAGNOSTIC, PROGNOSTIC, AND CURE.

An *hydrocephalus*, whether from an external injury or inward causes when it arrives at any considerable height, cannot be mistaken. The preternatural size of the head, the openness of the skull, at the sutures, and the easy yielding of the bones, particularly the parietals, to pressure, are univocal signs of this disorder. I think,

think, however, that from the symptoms ONLY, we may, with some degree of precision, determine, whether the disease arises from an external or internal cause. I do not wish to establish any hypothesis, or that the young surgeon should form his opinion of this matter implicitly, from what I have to offer. My only object is truth, and till further observations can be collected, either to confirm or reject it, it may be safely adopted.

I do suspect, that hydrocephali from internal causes, proceed from some original defect in the organization of the parts, or from some languor or defect in the vessels of the brain, which early begin to manifest themselves more or less, according to the degree of imbecility of the parts. I know that many writers (but particularly Dr. Fothergill †) are positive, that this disorder is mostly confined to children, from 3 years old, to persons of 19 ; but it seems more reasonable to suppose, that there must be a greater tendency to it in infants, where the

† Medical Observations, vol. 4. p. 45.

bones of the head, are not well formed, and the futures open, than when they become more close and compact. In what instances I have seen of it, (and two I have dissected) all were infants, from 6 to 15 months, and in the above two, the water was lodged in the ventricles, and all seemed to have died from a natural decay. In the Edinburgh Medical Essays, \* the case of a child of a year old is related, who, from the first month, shewed strong signs of an hydrocephalus. The head became gradually so extended, as that when examined, by Mr. Mowat, it measured 27 inches and an half in the circumference, and it was still visibly enlarging. During this time, she had two teeth in the under jaw, and two more appearing in the upper. Her chief subsistence was the mother's milk. She had no colliquatise stools, but had scarce flesh to cover the bones, and yet had no other symptom, except being heavy, and at times lethargic ; and to all appearance, might have lived two or three months longer.

\* Vol. 3. p. 264.

## C A S E XVI.

A most remarkable case of this kind, fell in my way—The daughter of a respectable young couple, about 10 miles distance from this city, was born with a preternatural sized head, which instead of lessening, daily encreased, in spite to all the innocent methods tried to prevent it. In September, 1778, I was called upon to visit this child. She was then 15 months old, all the futures of the head remarkably open, and the whole head distended to a most astonishing size ; infomuch, that its weight made it distressing to her to be kept up, so that it was mostly supported by pillows. She was not near so much emaciated as the case before it, and both sucked and fed on pap, &c. with some appetite. Her pulse were slow, even and regular, and she had no complaints but an heaviness, the consequence of the weight on her head, nor was her sight much impaired. Finding the skull pliable, [and that she did not complain,



complain, on gently compressing its parts, I took the resolution on the spot, of trying what might be effected, by a writing bandage. Compresses wet in spirits, were spread over the futures; and with a double-headed rowler, I commenced at the poll, passing the fold of one band through an opening in the other on the forehead, and by the pressure, reduced the entire circumference an inch and an half. The bandage was ended like the double capulina. I directed, in case the child seemed very uneasy, or the least inclined to fits in consequence of this pressure, to cut immediately through all the bands, otherwise not to disturb them. I returned in a week, and found them as I left them. I began a new bandage, and closed the head an inch and an half more; and directed the compresses to be wet in spirits twice a day. I ordered the band, if loose, to be tightened. After this a cap was formed, on the same principle, to be constantly wore; and the child to be dipped in cold water. I did not see her since, till October, 1782; her head was then greatly reduced, and the futures near closed. It is still larger than it ought; but she is in  
spirits

spirits and health, and *the weight of it*, not very incommoding.

This child, with her grand-mother, are now in town ; and I have examined her more than twice. The size of her head is not encreased ; but it appears still enormously large. Where the futures were so remarkably open, and the covering integuments very thin, a perfect closure and ossification seems to have been formed. A fall of the head on the ground, which happened some time ago, had not the smallest effect on her : she holds it straight ; but if in bed, it chances to slip off the pillow, she is not able to raise it, though she can otherwise turn from side to side, without assistance. Her sight is good ; she walks with visible apprehension and difficulty ; her appetite tolerable ; is never heavy or sleepy in the day ; but there is a visible weakness of the intellectual faculties.

When these cases and their symptoms, are opposed to case the 15th, and the following, the sensible reader, I apprehend, will be apt with me to conclude—*'till further observations can determine the point with precision*—that internal hydrocephali

drocephali proceed from some defect in the organization of the parts as yet unknown, or from the secretions not being properly conducted, and are chiefly confined to infants ; but that hydrocephali which appear, after the second year, are really and truly the consequences of injuries done to the cranium, or through it, communicated to the meninges of the brain, and as such should be considered and treated.

As to the Prognostic of this complaint, from what cause soever proceeding, it is to the last degree direful ; and we have scarce an instance in physic, of the cure of an hydrocephalus, being effected.

Having however, I hope, established some rational principles to proceed on, I shall propose from them, a method of cure, which seems to bid fair in some instances, for being attended with more success than has attended the hitherto adopted mode of practice.

To assert—and it has been an universally received opinion—that worms are the efficient cause of watery collections in the brain, whilst

no one ever dreamed that an ascites, or leucophlegmatia, took their rise from worms, is one of the many instances, how easily errors, and most absurd ones too—are propagated from age to age ! Had this opinion no greater effect on the human Constitution, than the Philosopher's has on the unerring laws of Nature, there could be no great harm in it. But this is not the case, for Practice is warped by Theory, and calomel scammony, and other strong anthelminthics, are the course recommended and prescribed ! In lieu of which, in internal *hydrocephali*, I would give, from time to time, small doses of the tinctura anodyna, which is described in the 4th Chapter—from three, to five or ten drops, to produce a diaphoresis, and assist in absorbing part of this watery deposit. I would also have the head frequently chafed with——

R. Sp. rorismarin. unc. sex, camphoræ  
drachm duas. sp. volat. aromat. dr.  
sex ;

And if this would cause pimples or eruptions, I would still persevere in the same course, but  
I would

I would have the head covered, between the applications, with a cerate of wax and oil.—The spine from the neck down, should be often chafed, with something like the following, and the nurse should be allowed a generous diet, with some glasses of wine, every day.

R. Ung. nervin. unc. tres, olei macis p.  
expres. dr. tres olei caryophyllorum  
drachm. ol. terebinth. Q. S.

M. f. liniment.

If these answered any good purpose, I would afterwards dip him in cold river water; and if they even were not accompanied with success, I would nevertheless constantly dip him; for it is but too apparent from the nature of the distemper, that whatever can promote the secretions in general, and assist in bracing and strengthening the Constitution, must ultimately tend to alleviate this complaint.

If, from this course, the patient was not sensibly better and lighter; and that no tendency appeared towards lessening the weight or extravasation on the brain; that is to say, that  
the

the extent of the head did not at all lessen ; but rather encrease ; that the futures still continued open, and the bones, particularly the parietals, were thin and pliable ; I, in this case, would most certainly recommend the following operation, to discharge the impacted fluid. As much flesh, about the center and lateral part of either parietal—the most distended for choice—should be removed, as would give room for the working of two large crowns of the trephine, one within the bore of the other, as already described, and above it. When the perforations of the skull are effected, and the pieces removed—and the operation should be done with great caution, on account of the thinness of the cranium—the dura-mater will, most probably, by its rising, or by the touch, point out the depth of the fluid. Most writers agree, that it is generally found in the ventricles of the brain ; but there is a great difference, between the brain, in a living subject, and when dead ; the uniform regular motion of it, in the first instance, giving a greater degree of activity to the fluid contained, than when in an absolute state of quiescence, as in the second.

cond. Besides, in case the 10th, the water was not confined to the ventricles, but diffused through the substance of the brain; and indeed, it is not easy to conceive, how they should contain so large a quantity of fluid. It is manifest, it must be dispersed through the surface of the brain, as water is protruded to the surface of the belly; and is not the very swelling and distension of the head a proof of this, as that of the belly is, of water being lodged all round it? A lancet should be plunged through the dura and pia-mater, into the substance of the brain, to the depth of half an inch, and continued from above downwards, near the length of the perforations in the cranium, avoiding, as much as possible, the wounding the vessels of the dura-mater. I prefer a free opening to a puncture, as less danger is to be apprehended from it. If water came away, I would let it flow freely, even if mixed with blood, (which probably must be the case,) and then dress the surface of the dura-mater (*only*) and fill up the whole cavern with soft scraped lint, but very

H

well.

well aired, to make it the greater absorbent, and the more comfortable to the parts.

Should no fluid discharge from the aperture, still the operation will be attended with some advantage ; as the inflammation subsequent to it may be a greater stimulus to nature, and contribute more to absorb the watery deposit, than probably, all other remedies besides.—

That my meaning may not be mistaken, I must again repeat, that by an hydrocephalus, from what cause soever proceeding, I understand, a collection of water, with a preternatural distension of the head, openness of the sutures, and a sensible thinness of the bones of the cranium, accompanied at times with heaviness and stupor. This definition, I think, the more necessary, as, in some hours after dissolution, water is generally found in the cerebrum, in a greater or less quantity, without, at the same time, any real disorder existing there. This is a fact, known to every Anatomist ; and I fear, for want of attending to it, that in some of the cases, described by Dr. Fothergill, \* he

\* London Medical Essays, vol. 4.



has resolved this natural appearance of water, into an hydrocephalus ; and for this reason, that he affirms, that he has seen children carried off by it in about 14 days, who were, to all appearance otherwise, well and hearty ; a thing, I am certain, absolutely impossible from the very Nature of watery collection, lodged in what part soever.

If then a child, *before this period, in good health*, complains at times of weight and heaviness in the head : If it becomes more troublesome and painful, without the pulse manifesting any extraordinary fullness and celerity ; if this is succeeded, by sickness of the stomach, puking, and loss of appetite : If the head visibly enlarges ; the bones of the cranium become thinner and more distended, whilst the futures, instead of closing, are more open, this may be safely pronounced an hydrocephalus ; and I venture to affirm, an hydrocephalus from an external injury ; which any one of but confined knowledge in physic, will easily distinguish from the large head, generally attendant on rickets, as the narrow chest, weak and dis-

torted limbs, with the constant crazy constitution of the latter, cannot suffer us to be imposed on.—

Called in to a case like this, I would, on the spot, order the head to be chafed with the spirituous mixture already described, being first close shaved, and the emplastrum calidum, to be applied immediately after. Doses of Dover's Powder, or Anodyne Tincture, should be given according to the age and strength of the patient, and a blister applied to the neck and shoulders. We should wait a good number of days to see the effects of these remedies ; but should no visible advantage be gained by them, and that the patient should, instead of mending, grow sensibly worse, with an increased tumefaction of the head, I would in such cases, desire a consultation of able Surgeons and Physicians, lay open to them my suspicions ; and, if it met their hearty concurrence and approbation, I would, without loss of time, apply one or two crowns of the trepan, and to, or nearest the part, most pained, for choice.

## CHAPTER VII.

Of concussions of the brain, arising from external injuries—the cerebrum, not the seat of the animal faculties; nor the cerebellum of the vital. Fatal consequence of injuries to the medulla oblongata, and spinalis. The animal functions reside in the medulla oblongata, as well as the vital—the line between them, attempted.

**I**N the diseases hitherto described, attendant on injuries of the head, we have seen reason still preserved, because the brain itself was not immediately injured. We now proceed to treat of these accidents, in which the organ only becomes hurt and their consequences.—But, in order to make this whole affair more clear and comprehensible, it may not be amiss transiently to advert to the received opinions, as to the seats of the vital and animal faculties.

The

The vital principles, it has been agreed on, by Willis, and the most celebrated Physiologists, are placed in the cerebellum, and the animal in the cerebrum. Without descending to particulars, it has been since proved by Haller,\* La Peyronie, † and others, that the cerebellum is not the seat of the vital faculties, as it has been found diseased in some; nay, in a manner quite effaced, in others, and yet the vital faculties have subsisted ! Without having recourse to other authorities, numbers of which exist, it will appear, from a most remarkable case, now to be related, that the animal faculties are not placed, with some in the membranes of the brain, nor in the cerebrum itself, much less in the glandula pinealis with Des Cartes, or the corpus callosum with La Peyronie !

\* Pathological Observations and Dissections, Obs. 1.

† Mem. de Academie de Chirurgie, T. 2. p. 136—7.

## C A S E   XVII.

JOHN SHEA, a poor cottager, living about a mile from this city, late in the evening of the 24th of June, 1761, being in liquor, insulted some gentlemen passing the road, who probably being not in a much better situation, fell upon, and beat him IN A MOST UNEXAMPLED MANNER. In this situation, he was carried to his cabin, and next morning, I was requested to visit him. Though the fracture was the most extended one I ever saw, and that the brain was ouzing out of the wound, yet the man was calm, and in his perfect senses, relating the cause of dispute, and the different persons, who attacked him. On examining, I found the coronal bone at the right side, from a little above the orbit, to its junction with the parietal, entirely broke, as was this last bone, through its extent. It was necessary to remove some of the integuments, in order to extract pieces of bones lodged in the substance of the  
 brain;

brain ; but I found a necessity of doing this with caution, because, for a considerable extent, no traces of the dura or pia-mater could be found ! by this operation, I removed three considerable pieces of bone, totally detached from the rest, and sunk deep in the cerebrum, the ends of which only appeared. As the bones, through the rest of this extended fracture, did not press on the brain, and had besides some degree of cohesion, I judged proper to make no attempts on them, and dressed the surface of the brain with bals. peruv. diluted with spirits of wine, milk warm, in which pledgits of soft lint were moistened, secured by compresses, and the grand couvre chef. Though he lost a considerable quantity of blood from the injury, and that his pulse were moderate and regular, yet, I judged a bleeding necessary, and a decoction was thrown up, some time after. He passed the night tolerably easy, complained little of pain, and was quite composed and collected. The 26th, several bits of bone came off with the dressings, mixed with the brain itself, in a *considerable quantity*. As he was perfectly in his senses, Alderman Sexton, who came out with me,

me, the day before, to take his examinations, which he deferred to this day, now took them down. I attended the whole time, and never heard any one speak clearer, or more circumstantially as to facts, which I found confirmed by some of the bye-standers, persons of repute.

He was again bled this day, and took a second decoction, with proper effect. This night was rather better than the preceding. The 27th, a very disagreeable foetor came from the brain, and the surface of the fore was greatly discoloured. His pulse were, however, regular, his spirits good, and his intellects quite clear. The night tolerably quiet. The 28th, the stench much stronger, and a very large discharge from the brain, insomuch that the dressings and compresses were, in a manner, drowned with brain and pus, mixed with bits of bone. Reason, however, continued perfectly clear, and his pulse, uniform and regular. The compresses were now wet in warm spirits, and he took every three hours, a tea-cup of a strong decoction of the bark, with sweet elixir of vitriol, and was allowed seasoned broth, with spoon meats. It is very necessary to observe,  
that

that every night from the beginning, he took a paregoric e. g.—

R. P. rad. Valer. filv. gr. duodecim, p. castor  
mp. gr. duo-aq. menthæ cinamom. ten.  
ad unciam tinct. thebaic. gutt. duodecim,  
fyr. aurantior. dr. tres M.

Passed the night well, and took at times broth, panada, and wine whey. The 29th, stench from the fore, nevertheless, scarce supportable, and of an unusual acrimony, and the surface of the brain quite black. His reason was still clear, his pulse regular, and not the least tendency to fever; I suspected that he would die that night, convulsed and insane, but I proved a false prophet, for he passed it very quiet and composed. The 30th, he complained of great weakness in the left hand and arm, and the 1st of July, they were completely paralytic! The fore continued to discharge greatly, inasmuch, that when I affirm, that not less than 3 ounces of the brain, with an horrid smell, followed every dressing; I am certain, that I am a good deal under the quantity. The 2d, the discharge rather encreased, and the stench highly



highly offensive, though great attention was shewn to the cleanness of the compresses, &c. but the surface of the fore was not so discoloured. This day the left leg and thigh became paralytic. The 3d, the discharge not so abundant, and the stench a little abated. Two pieces of loose bone were extracted, and the surface of the wound enlarged. The pulse still regular, and the intellects clear. The 4th, the discharge and stench from the wound abated, and the fore clearer, the large piece of the coronal from the orbit very loose, and its superior part, pressing on the brain. The pulse regular, and reason sound. Alderman Sexton came again to examine him, and found his narrative, in every particular, to agree with the informations he had already sworn to. The 5th, the discharge from the fore, still less, and the smell very little. This day, the remaining piece of the coronal of the right side came away. The cavern now was terrible, and I feared, that the remains of the lobes of the right side of the brain would follow, but the membranes were entire underneath, which prevented this calamity. How  
 \* Diary of this case ends, with the following  
 remark.—

remark :—Notwithstanding his situation and sufferings, this poor man was never heard to complain, except for the distresses his poor wife and children must be involved in, by his death. Though pious and resigned, yet his temper was so cheerful, as to joke with his poor visitors. Curiosity and information, to say nothing of other motives, prompted me, to visit him regularly to his death, which happened the 17th day from the accident, with little pain ; and to the moment of dissolution, he preserved his intellects !

From what has been said, *it is certain*, that the cerebrum is no more the seat of the soul, or animal faculties, than the cerebellum is of the vital. That both are placed in the medulla oblongata, the most glaring and stubborn facts prove. If the continuation of the medulla oblongata, called medulla spinalis, be divided, or even wounded, at the first or second vertebra of the neck, death immediately follows, as may be proved on any quadrupede ; and, I am told, that by darting a sharp pointed knife, between these vertebræ, the Jews kill their cattle. A  
disco-

dislocation of any of the vertebræ of the neck is attended with CERTAIN DEATH, the same with the dorsal and vertebræ of the loins, as well as in wounds of them ; but this dissolution is sooner or later, according to the distance from the atlas, or first vertebra of the neck as we shall shew. M. Petit \* gives a remarkable instance, where CERTAINLY, the odontoid process of the second vertebræ must have slipped from the atlas ; and instant death was the consequence—thus he relates it. A boy, between 6 and 7 years old, was, in a jest, raised from the ground, by a man's putting one hand under his chin, and the other behind, on his poll. The boy, by a sudden motion in the air, dislocated the neck, and was instantly dead. His father, enraged at the sight, threw an hammer at the man, the cutting end of which, wounded the spinal marrow, between the first and second vertebræ, and he died immediately also !

I have met with two different cases, which will be related in their place, (see chapter 19,)

\* *Maladies des os.* T. 1. p. 65—6.

wherein

where in one, the third vertebra from the atlas, was not absolutely dislocated, yet the spinal marrow was compressed, and in the other, the fourth vertebra was in the same predicament. In both cases, the accidents were followed by death. The first lived five, and the other seven days.

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### C A S E XVIII.

I N June, 1773, I was sent for by a Mr. Pennyfeather, then living about three miles from this city, to visit a man, who, the day before, was wounded by a pistol-ball, at the 7th dorsal vertebra, counting from above. He, with some others, went to take a *possession* in the neighbourhood, which was peaceably given up to them. On his return, they told me, that crossing a stile, a pistol in his pocket accidentally went off, and wounded him.—But, as I found on enquiry, that he immediately was deprived of the use of his extremities ; I concluded the medulla spinalis was hurt, which  
I had

I had no doubt of, upon learning, that his fœces and urine came away involuntary. An apothecary had been to see him, before I came, and made slight of the hurt ; but on examination, I found the direction of the wound, from above downwards, and the ball to be lost in the passage, or what is more probable, lodged in the body of the next vertebra, so that the nature of the wound by no means corresponded with the account I had got of the accident. I prognosticated death to be the consequence, and told the poor man himself, in the gentlest manner I could, the nature of his case, and its certain tendency, which he heard with fortitude and resignation. About four days after, I was again called to repeat my visit. In this time, by the involuntary discharge of his urine, &c. and I suppose, being not kept over-clean, the scrotum, and parts adjacent, became excoriated and raw, and it was from these circumstances, propounded to me, that the man had *some latent venereal taint*, and to this, it seemed *a wish*, that the above symptoms might be resolved. I assured the people, that if called upon, on his *Inquest*, I would certainly declare,

his

his death the consequence of the wound, and these excoriations, &c. the effects of the injury to the spinal marrow. He died two days after, and I never heard more of this affair, which to me, seemed very mysterious and dark!

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### C A S E XIX.

A YOUNG Gentleman of rank and considerable fortune some years ago, was thrown from his horse in hunting, in the county of Kerry, and a dislocation of the tenth vertebra of the back was the consequence. It was said to be a complete dislocation; I never visited the gentleman, but from the symptoms that attended it, and the length of time, which he lived after it, I think myself well justified in concluding it to be a partial one. On the spot, or very soon after, he was deprived of the use of his extremities; and after a variety of efforts made in Kerry, he was removed to Cork. His excreta were involuntary, and, in this situation, and with a total deprivation of the use  
of

of the extremities, he lived near six months, from the date of the misfortune.

The vital faculties being to demonstration placed in the medulla oblongata and spinalis, where shall we, with similar precision, place the animal? Not in the corpus callosum, with La Peyronie, because in case 17, part of the fractured bone was lodged even deeper than it; nor in the brain itself, because, in this case, reason must necessarily be impaired, in proportion to the quantity destroyed, which the above recited case also denies! We have seen large quantities, in some, of water, in others, of matter, formed in the very substance of the brain, without reason being impaired; and we shall, in its place, see matter formed on the dura-mater, by the pressure and irritation of the points of fractured bones, and as soon as the fever and delirium, the consequence of such inflammation, had subsided, reason become restored, though this matter discharged in abundance, for very many days after, from the dura-mater!

From what has been said, it is, I think clear, that no other place is left for the PRIMARY SEAT of the SOUL, but the *medulla oblongata* also, and here I shall place it. If the *medulla oblongata* be then the primary seat of the vital and animal faculties, it will be said, that both must be MATERIAL, and consequently MORTAL! But such conclusions cannot be supported. Nothing is clearer than, that the functions of the soul, and the vital ones, are in the same person, as distinct as possible; the latter being merely mechanical, and independant of the will. For instance, the blood circulates, the secretions are carried on, and respiration continued, as regularly and uniformly when asleep, as when awake, *whilst, at the same time*, there is a sensible suspension of the faculties of the soul! In persons born, and grown up idiots, who may, with precision, be called *animalia irrationalia*, in infants, &c. the same thing is every day seen. To prove, how little the operations of the soul depend on the vital faculties, we mostly observe, ricketty children, where the bones are bended, the spine distorted, &c. to have the rational faculties, much stronger



stronger than heal thy children. The madman, in the height of insanity, shall shew amazing proofs of strength, whilst the valetudinarian, in the last stages of a *decay*, and in *the moment of dissolution*, shall from the clearness of his reason, prove the soul to be in a state of full vigour ! Can such a soul be said to be mortal ? at least, to die with the body ! Every bodily disease, that ends in death, and whose symptoms have been attended to ; on anatomical inspection, will, for the most part, exhibit the cause, and the effects of this disease ; but can the like be affirmed, where the mind labours under any defect ? If an insane dies of an inflammation, disorder in the bowels, or in any other viscus, on opening the body, the seat and nature of the disorder will readily appear ; but what information do we derive, by the nicest investigation of the medulla oblongata and brain, as to the loss of reason, and suspension of the animal faculties, which may have subsisted for many years before his death ? None ! not only the soul itself, but its attributes, the *senses*, prove they exist, from some immaterial cause. If the disorder of the eye, called a cataract, ob-

struct vision, yet the cause is known to be an opacity of the cristalin lens. The cristalin is known not to be essentially necessary to sight, but a medium, to refract the rays of light through : the depression, or removal of this body, will necessarily restore sight, and if the patient dies, with the complaint on him, the cause of it, by inspection, is soon known. But if he be attacked with an amaurosis, or gutta serena, and that the dilatation and immobility of the pupilla, shew the absolute paralytic state of the optic, and motores oculi, &c. nerves ; in this case, after death—I repeat it, from my own knowledge—the most expert anatomist will not be able, by any defect of the eye, to trace the causes of it. The same may be said, when the olfactory, auditory, &c. nerves are affected. Their ramifications may be as easily and clearly traced, after death, as those of a person, who enjoyed all these senses in perfection ; but the cause why they ceased to act, must remain unknown !

Thus

Thus we see to demonstration, that the vital and animal faculties are as distinct as possible ; and, though I have placed the seat of both in the medulla oblongata, yet, even here, I believe they occupy different and distinct places. For though every part of the medulla oblongata is undoubtedly mortal, yet, I strongly suspect, that the ANIMAL functions are chiefly confined to that part of it, from which the first seven pair of nerves of the medulla oblongata originate, and no other. Say then, ye Sons of *Materialism*, of immorality and blasphemy, for what purposes did the Almighty endow you with IMMORTAL SOULS ? was it to war against Heaven, reason, and conviction ?

## CHAPTER

## CHAPTER VIII.

Of Concussions of the Brain, and Medulla Oblongata—Class the First.—Fissures of the Cranium, reducible to this Class.

**H**AVING, I hope, established the seats, and pointed out the functions of the animal and vital faculties, on clearer principles, than heretofore done, I shall now treat of these external injuries of the head, by which the animal faculties are chiefly affected.

Besides extravasated blood on the cranium, matter lodged on, or under the dura-mater, and hydrocephali, we experience other most dangerous disorders to arise from injuries of the head, without the bones being at the same time in the least injured. When, from a violent blow or fall, the force of which is resisted by the cranium, and, in which, neither the membranes of the brain, nor this organ itself are affected, we may be assured, that its ultimate

mate force is spent on the medulla oblongata. The symptoms of affects of this kind, are a deprivation of the animal faculties, with a strong, regular, and slow pulse; so that when called in, after a violent hurt to the head, whether by a stroke, fall, &c. if we find the sick, in a state of listless insensibility, without speech, or at least incapable of making proper answers to questions; with a slow regular pulse, and his hand often on the injured part, we may rest assured, that his complaint is, what is generally called a commotion, or concussion of the brain, and that the cranium itself is in a sound state. The symptoms of this complaint, will make it be easily distinguished, from these, arising from other injuries of the head. For though loss of sense and motion, may succeed other hurts of the head, yet they are but temporary, seldom exceeding an half hour, or an hour, and are rather the consequences of the sudden injury the whole animal œconomy has sustained, than any particular symptom of the hurt. But in commotions of the medulla oblongata and of the brain, the state of insensibility, with a strong, regular pulse, are its particular symptoms,

toms, and continue a longer or shorter time, in proportion to the violence of the injury.

This disorder I shall distinguish into three different stages, such as, by experience, I have found it ; each illustrated by observations. In the first, the concussion of the medulla oblongata, and nervous system of the brain is so great, as to terminate in death. In the second, the vital functions may continue, the person recover, but the animal faculties will remain impaired ; and in the third, both health and reason will be restored.

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## C A S E XX.

MR. Kerin, a gentleman from Dublin, returning from Castle-Connell to a gentleman's house, in the neighbourhood, where he was on a visit, in October 1760, was thrown from his horse, on his head, crossing a field, and taken up immediately by his servant, but speechless and senseless. Dr. O'Brien and Mr. Mahony, of this City, were immediately sent for,

for, as were Dr. Shearer and I, two days after. He had, in the interim, been bled profusely, been blistered, and every other medical attempt essayed, to rouse him from that lethargic and insensible state he had been in, from the instant of the fall; to no visible advantage. His pulse were regular, and remarkably slow, his hand constantly on his forehead, and no trace of injury could be found on his head, but a red spot, about the size of a shilling, on the middle of the right parietal bone, on which part he fell. There also constantly oozed out of the right ear, and immediately after the accident, a clear limpid water, which might amount to, *at least*, the quantity of 12 ounces in the 24 hours, and which ceased not, till his death. Though satisfied, that no fracture existed, yet, by way of trial, and to see if there might not be some fissure, we concluded to scalp on the injured part, which I immediately performed, and removed the pericranium, but not the smallest trace of hurt to the bone appeared. In a word, he died the fifth day, from the accident. I was very curious to open the head, in order to trace any possible cause for his

his death, and for the discharge of water from the ear, which I never met with, either before or since, but the family would by no means consent to it.

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## C A S E XXI.

A Young gentleman, of a most amiable disposition, in June, 1770, riding home late at night, was pitched on his head, in an hard rocky, though smooth part of the side of the road,, and soon after taken up and brought to his own house, in a lethargic and senseless state. An express came off immediately for me, but engaged in town, I could not quit till next morning, so sent out Mr. Mahony. Next day I visited him, with Dr. Barret and Dr. Martin. In the mean time, he had been bled, both in the arm and the foot, and I proposed a large blister between his shoulders, and to give him at times, a tea-cup full of a strong infusion of fine green tea, in order to rouse him from that state of insensibility in which he continued—

Now



Now every one knows, that inebriety, which is a kind of temporary inflammation of the brain, is most sensibly relieved by strong tea or coffee; and is it not surprizing, that such obvious effects are not applied to practical cases?—Both proposals were however overruled, and I returned to town that evening. In this case, no sign whatever of fracture appeared, but the right side of the head and face were here and there scraped, as if by sand or pounded stone. In two days after, finding him no way mended, nor in the least roused from his lethargic state, he was first scalped, and the day after trepanned, but he died a few hours after the operation. In this case also, the pulse were slow and regular, and he held constantly his hand on his forehead.

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## C A S E XXII.

MR. T. G. residing about 15 miles from this City, in July 1779, received a blow of a spade-tree on the posterior and superior part  
of

of the left parietal—this happened late at night, and next morning he was removed to his own house. He had a longitudinal wound of about an inch, which was dressed by an apothecary from Rathkeal, and though he remained in a lethargic state, yet some of the effects of it were attributed to liquor. But on continuing so, all that, and the following day, the family became alarmed, and I was sent for the third day. His pulse and the symptoms satisfied me, before I examined the fore, that the cranium was not the injured part ; for the pulse were slow and regular, and he remained in a state of listless stupidity, with his hand to his head, yet would sometimes answer a single question, and search for the vessel, when he wanted to make water. He had been twice bled ; and I did not wish to extend this evacuation, because I am satisfied, it answers no good purpose in complaints of this kind. On examining the wound, I could not find even the pericranium bare, yet, as it was a case, where a trial for life must be the certain consequence, lest it might be insinuated, that every thing that should be done, was not done, I enlarged the wound, and  
laid

laid bare the cranium, to prove that no pretences for an application of the trephine existed. I directed an opening decoction that evening, and to be repeated the next, and ordered

℞. Mixture salinæ, aq. cinamom. ten. ad.

M. tres. pulv. rad. valerian. silv. scrup.

duos p. castor. rup. gr. duodecim, tinct.

foetidæ, dr. duas, tinct. thebaicæ, semi-

drachm. fyr. de althea dr. sex.

two table-spoonfuls to be taken every 3 hours, and a blister was at the same time applied to the neck, and directions to give at times, a cup of strong tea. I gave a candid opinion, that I feared the case was mortal, and I declined remaining there, as I saw, that there was nothing particular more to be done for the present; so left directions with the Apothecary, with a desire to be informed from day to day, of any alteration. The evening of the next day, I was requested to visit him, the following morning, with his family physician. I did so; but his growing so much worse in the interim, proved his dissolution very near; I told them, he would not pass the night; and it was a point agreed,

agreed on, that, in that case, an express would follow, and I promised to return next morning to open the head.—

About 12 o'clock next day, I performed this operation, in the usual manner. The cranium in firmness and thickness exceeded the common size, and the dura-mater, under the injured part, adhered as close to the bone, as in any other part; nor did the bone carefully examined at both sides, exhibit the smallest vestige of hurt whatever. The vessels of the dura-mater, &c. were in a middling state, exhibiting neither state of inflammation, or relaxation. No rupture of blood-vessels on the brain, no extravasation whatever. In short, nothing appeared more in this dissection——and I was minute in my examination——than would on dissecting any indifferent head, in the Amphitheatre !

C A S E

## C A S E XXII.

THE Butler of Colonel Prittie, an athletic man, about 40, riding through the town of Nenagh, in July 1759, was thrown from his horse, from which fall, he received a pretty considerable wound, on the middle of the left parietal bone. He was immediately taken up, but quite lethargic and senseless. The wound bled freely, and for a considerable time could not be stanch'd, notwithstanding the different methods try'd for this end. Early next morning, an express reached me, and I visited him the afternoon of that day. I found him, in exactly the state described, with a strong, regular, and slow pulse; and though I was convinced, that the real injury, was a commotion of the cerebrum, and medulla oblongata, which the trephine could neither reach nor remedy, and that the disorder would soon terminate in death; yet, from the importunity of the people, and lest any thing might be supposed omitted, which might afford a chance  
for

for life, I, after preparing dressings, enlarged the wound, removed the pericranium, and applied a large crown of the trephine, on the injured part. The bone was perfectly sound, and nothing appeared on the dura-mater, but two or three drops of blood, the effects of the adhesion, between it and the cranium, at this place. He was not in the least mended, but visibly worse, after the operation, and died about five next morning.

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## C A S E      XXIV.

IN May 1760, I was sent for, to visit a butcher in Rathkeal, about 14 miles from this City, who, two days before, received a violent blow on the right temple, which brought him to the ground, though a very strong man, and he directly fell into violent convulsions. These were succeeded by delirium and stupor, interrupted at times, by violent fits of insanity.

When

When I first saw him, he was secured by assistants, had an uncommon hardness and fullness in his pulse, his eyes inflamed, and his face very red. He had been twice bled. Upon examining the parts with the utmost attention, I saw no cause to suspect a fracture. The stupor, I was satisfied, proceeded from a commotion of the cerebrum and medulla oblongata, but the uncommon hardness, and fullness of the pulse, with fits of insanity, &c. made me suspect, that it was accompanied by a violent inflammation of the brain, and probably, the rupture of some considerable blood-vessel. At any rate, the state of the pulse, and the symptoms, demanded profuse evacuations, and these I determined he should have; but to make them more effectual, I resolved, that they should be as near as possible, to the seat of the complaint. I caused his head to be shaved all over, and then opened the temporal artery of the affected side, from which the blood poured out with rapidity. When he lost about fourteen ounces, I found the vessels pretty well emptied, and bound up the parts with the usual

K

bandage,

bandage. The head was chaffed with a mixture e. g.

R. Sp. rorismarinæ unc. sex, camphoræ drachm. fp. volatil. aromat. dr. sex. M. f. embrocatio ; and compresses wet in this, covered the head.

He took also every two hours, powders of nitre and valerian, with the saline mixture, and in the evening, a decoction, which procured some plentiful evacuations. He passed the night more composed, than any of the preceding ones, since the hurt; and next morning, I opened the artery at the opposite side, from which I got about 10 ounces of blood. His pulse became moderate, and he more calm and composed, but still lethargic. I directed a large blister for his back, and physic for the next morning; and he recovered so fast, as, in about three weeks after, to be able to follow his business. In passing through Rathkeal two or three times after, I called to see this man, and he continued in perfect health; but I was afterwards informed, that between three and  
four



four months, from the time of the hurt, being one day put into a violent passion, he instantly dropped dead.

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# C A S E XXV.

THOUGH the case now to be recited, may be thought properly, to come under that part of this Treatise, which relates to injuries done to the cranium itself, yet as the symptoms and effects of it, arose from the commotion of the cerebrum and medulla oblongata ONLY, I thought it with more propriety might be introduced here.—About one o'clock in the morning of the 12th of February, 1774, a gentleman, whom I had never seen before, had me knocked up. He told me that a poor man was lying in the passage of a Tavern, he believed, with his skull broke, and an act of humanity had induced him, to take the liberty of calling on me to see him. I told him, that as by his relation, the man was both helpless and friend-

less, I would immediately call to see him ; but begged, that he would by no means, place the visit to his own account, whom I had not the pleasure of knowing, but to the dictates of my own feelings. I found the poor man pale and cold, with scarce the smallest motion of the pulse, and to appearance dead. A fellow, who sat by him, told me, that he had drank an amazing quantity of spirits, and in consequence fell and cut his head, on a step of the stairs. Hereupon he shewed me a very slight hurt on the superior, and middle part of the left parietal. I cut the hair close round the part, and scarce any sign appeared, but that of the skin's being broke, about the size of a silver three-pence, but the cranium underneath quite firm. On a supposition, of a super-abundance of spirituous liquors, being the cause of these symptoms, I had some draughts of warm water forced into the stomach, and with a feather, endeavoured to make him evacuate some of this deleterious stuff ; but though I did not succeed in this last object, yet the efforts gave a small stimulus to Nature ; his colour returned a little, and his pulse became sensible. A few

moments, however, convinced me, that his case was beyond the assistance of Art ; so I desired he might be put into bed, and if alive next morning, I would see what more could be done for him ; he, however, expired in about two hours after. About 10 o'clock in the day, Mr. Johns, then Mayor, called upon me, and requested I would be so kind as to attend an Inquest ; for some circumstances had fallen out, and some informations had been received, that his death was the consequence of an assault. Upon a close and clear investigation of the matter, it was proved, beyond a possibility of doubt, that this very Gentleman, or rather abandoned profligate, who had applied for my assistance, had met this man, who was a journeyman-shoemaker, and the only support of a poor old father and mother, and without much provocation or ceremony, struck him on the head, with a ball of lead, covered with leather, which was made as a kind of head to a ratan cane. But the appearance of the head raised a doubt in me, as to the fact sworn to ; for so little was the sign of the injury, that, if I had not myself cut the hair round

the part, I should be totally at a loss, to find the seat of it. I raised the scalp, for about two inches round it, and removed the pericranium; and there, to my great surprize, I found a fissure in the bone, of about an inch long ! As I do not think, that this word is a sufficient explanation of my meaning, I must, in its aid, adopt the word CRACK ; for it exhibited the same appearance, that a small crack in a pane of glass does, in which the glass itself, has been scarce injured. To be more fully satisfied, I took the resolution of raising the rest of the scalp, and sawing round the cranium, so as to expose the parts underneath to view. I did so; and found this crack had pervaded the bone, so as to be as visible within as without. The dura-mater was every where attached, as usual, to the cranium, except under this crack, where two or three drops of blood noted the separation. Both dura and pia-mater, were otherwise in a sound state. I examined the medullary and cortical substance of the brain, the ventricles, the medulla oblongata, the cerebellum, &c. with the utmost minuteness and attention ; and was not able to discover any sensible alteration,

any

any derangement of the parts, any extravasation, in short, any effect whatever, barring the crack in the cranium, which could satisfactorily explain the immediate cause of his death ! the delinquent, sensible of his criminality, immediately disappeared ; and I have been since told, met at New-York, the fate he justly merited at Limerick !

## CHAPTER

## C H A P T E R IX.

A Second Species of Concussion; or, of a  
Partial Recovery.

HAVING selected a few, out of a much larger collection of melancholy cases, where death was the consequence of violence communicated to the *animal faculties chiefly*; to demonstrate the justice and utility of the distinction, I shall present to the reader, two cases only, and the only ones I ever met with, where, though the patients recovered, the *animal faculties* were nevertheless never restored.

C A S E

## C A S E XXVI.

ONE Chamberlain, a resident of this City, in Nov. 1759, was thrown from his horse, on the side of his head, and the consequence was a stupor, insensibility, and every other symptom attendant on a commotion of the cerebrum. He had been bled on the accident, and the next day was visited by the late Mr. Gould, and by me. No wound or hurt appeared on the head, but a red spot, about the size of a shilling, on the middle of the left parietal, which we supposed the injured part; for he was incapable of affording us any information whatever. The jugular vein of the affected side, was this day opened, and a laxative decoction thrown up, to a good purpose. Next day, a blister was applied between the shoulders; and finding him continue two or three days after, in the same state of insensibility, it was more than twice debated, to apply a large crown of the trephine over the injured part. But as he

he did not grow worfe, and that the cranium appeared perfectly found, it was postponed, apprehensive, that if he died, it might be supposed the effect of the operation. He, by degrees, recovered his health, and is at this day alive and well, but never was restored to his senses. He is perfectly inoffensive ; always appears abroad decent ; never speaks to any one ; and his only amusement is gathering bits of sticks, or wood, by the water-side.

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## C A S E    XXVII.

JAMES GARDENER, a joiner, of this City, in May 1759, riding at a little distance from Allaky, a village, nine miles from hence, was thrown from his horse, crossing a field, and pitched on his head. He was soon after taken up, and conveyed to a neighbouring farmhouse, but continued the remainder of that day, and during the night, in a lethargic state. Word being brought to his brother next morning,



morning, he requested I would accompany him to see this man. Upon getting his head close shaved, and then carefully examining it, I could perceive no sign of hurt, except a red spot, about the bigness of a shilling, near the middle of the right parietal, but the nicest touch could discover nothing like a fracture. His pulse were regular, slow, but full and hard: his breathing was labored, he could not speak, and he had his hand constantly on his forehead. He had been twice bled before I saw him; but as the pulse continued full and hard, I opened a branch of the temporal artery, at the affected side, from which blood spouted out freely, to about 10 ounces. His head was frequently chafed with camphorated spirits of rosemary, and sp. volat. aromat. He took a decoction, and was directed powders of nitre, valerian and castor, with the saline julap every two hours, and that night, a large blister was applied between the shoulders. I left him next day, and ordered the medicines to be continued, and a decoction thrown up every evening. In about four days from my visit, I was informed by his brother, that he was a good deal

deal lighter, knew people, and could with some difficulty answer a question or two. In about 5 weeks from the hurt, he was brought to town, and tho' his pulse were regular and composed, yet his intellects seemed quite impaired ! I cut a seton in his neck, in hopes the drain might afford some relief ; and he took of the lac ammoniac, with castor and black hellebor, but to no sensible advantage. Twelve months after, I saw him at Allaky, his health established, but otherwise quite insane. What became of him after, I have not been informed ; but I take it for granted, that he has remained in the same melancholy state.

## CHAPTER

## CHAPTER X.

## Third Species of Concussion, or of complete Recovery.

TO point out with precision, the injuries of the skull, which demand the operation of the trepan, being a great object of the present work, a little reflection will soon shew, that concussions of the brain must be totally exempt from it ; because it is evident, that the seat of the complaint is far beyond the reach of any instrument ; and if there be instances of people's recovering after such an operation, it is unjust to attribute the cure to that operation. For there are not wanting instances, where, springing from a considerable height, on hard ground, though on the feet, yet the shock has been communicated to the head, and produced all the symptoms of a concussion of the brain ; and would any one think of trepanning in this case ? To prevent then an operation,

ration, useful to the Surgeon only ; to deprive him of a credit, unsupported by experience ; and to preserve the sick from an operation, which, at best, must expose him to much unnecessary pain and danger, I shall present to public view, a few striking cases in point.

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## C A S E XXVIII.

IN June, 1757, C. S. Esq. returning to his house, at a late hour, and unattended, fell from his horse. He, in some little time, became so well recovered, as to be able to reach home, and was put to bed. At first it was imagined, that he was very much in liquor ; but by frequently putting his hand to a particular part of his head, and perceiving there, a red spot, about the size of a shilling, a suspicion arose, that he had been struck, or fell, which was confirmed, by observing his hat dirty, and his wig broke, in the particular part, corresponding

ing

ing with the hurt. A Physician at New-Castle, and near at hand, was sent for, and he immediately bled; but finding in about 12 hours after, an insensibility, and comatous disposition, which manifested itself from the beginning, still continue, and that besides he had puked 3 or 4 times, a fracture was apprehended, and I immediately sent for. The head had been close shaved, before I reached the house, (about 17 miles from town;) and on examination, I found a red tumor, very little elevated, at the superior and posterior part of the parietal bone of the right side, near its junction with the occipital. But on the nicest and most exact touch, no sign of fracture or depression appeared; nor did he seem any more affected with a pressure here, than on any other part of the cranium. It was impossible to gain any information, as to the cause of the accident, as he was incapable of giving any; but reflecting, that if the skull had been fractured, or even materially injured, without a fracture, other symptoms would appear; and resolving all that did, to the force of the injury being communicated to the brain, I *pronounced decisively,*

*sively*, that there was no fracture, and that his disorder proceeded from a commotion of the brain, communicated to it, by the resistance of the skull, of course, that trepanning would expose him to fresh danger, instead of affording relief.

His pulse were quite regular; full, and rather slower than in a natural state; (a symptom, frequently accompanying this complaint.) I had him, however, bled in the foot, and his head frequently chafed with the following.

R. Sp. rorismarin. unc. tres.

Gum. camphoræ drachmam.

Sp. volat. aromat. semi unc.

M. f. embrocatio.

He took also, every 3 hours, powders of nitre, valerian and castor, in the saline julap, and had a decoction thrown up. He still continued in the same listless comatous manner, frequently putting his hand to the part affected. The next morning, by way of further derivation, I had blisters applied to his legs, as the preceding night, sinapisms had been to the feet; and Dr.

Anketill,

Anketill, the family physician, was sent for. The morning following I was discharged ; and he continued for 12 days after, in the same melancholy state. Being a young man, I was much censured, for not trepanning him ; and had I continued there a couple of days longer, I am certain I should have done it, more to avoid blame, than from any opinion I had of its good effects. Another Surgeon had been proposed, but the Doctor, satisfied of my abilities and integrity, would not hear it. Time did me justice ; he insensibly recovered, and continued in perfect health, for very many years after, but was at length taken off by a fever, to the great regret of his friends and acquaintances.

## R E F L E C T I O N.

THIS Case, circumstanced as I have described it, was a lucky event, to the party concerned ; and should be useful to the profession of Surgery. Had I remained in the attendance of this gentleman longer, I should certainly have trepanned him, for the reasons given. Had he died after the operation, probably it

L

would

would have been said, that it ought to have been performed sooner. If he recovered from it, no doubt, to it, would all the merit be assigned ; and in future, to the danger attending the first injury, would be added another—namely, the removal of a considerable part of the scalp, with the bone underneath ; and the dura-mater exposed, probably in more places than one ! By his perfect recovery without it, as in very many succeeding cases, we see to A CERTAINTY, that in all commotions of the brain, or medulla oblongata, which manifest no symptoms of a different nature, trepanning should never be attempted.

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### CASE XXIX.

— COLLOPY, aged about 19, and an apprentice to a jeweller of this City, in June 1770, returning from the races of Rathkeal, was thrown from his horse, within a mile of town,



town, and pitched on his head. He was immediately taken up, quite senseless, brought home, and bled on the spot in the arm, and next morning in the foot. That afternoon I saw him, for the first time. He had received a slight contusion, on the side of the left parietal; and with it, all the symptoms of a commotion of the brain, or medulla oblongata, and none other. Being young and full of blood, I judged further evacuations necessary, and accordingly opened the temporal artery of the affected side, and the body was kept moderately open. He took also powders of nitre, castor and valerian, in a strong decoction of green tea. For, from the effects of this last, on people, who have drank too freely, I hoped, in the present case, it might relieve the comatous and insensible disposition, under which he seemed to labour. A large blister was also applied between the shoulders, which discharged greatly. In about four days, he grew sensibly better; and in a week after, went to the country, & soon recovered his former health and spirits, which he has enjoyed to this day.

## C A S E XXX.

MARCH the 17th, 1772, I visited Mr. Magrath, a wealthy farmer, near Charleville, in the county of Cork. Riding home late at night, on the 14th, and much in liquor, he was thrown from his horse, and pitched on the crown of his head, on a stone pavement. On his fall, he also received a contused wound, on the posterior part of the parietal bone. He was taken up some time after, and brought to that town; where, in the course of two days, he was four times profusely bled, and suffered other evacuations, without the smallest apparent relief. Continuing still in the same stupid insensibility, in which he was found, immediately after the hurt, I was sent for; and from a recital of the accident and symptoms, was quite satisfied, that the seat of the complaint, was not in the cranium, even before I saw him. The examination justified my prognostic. There was neither fracture or depression, nor any visible external injury from the fall, ex-

cept a discoloration ; but on inspecting the wound, which he received from a kick of the horse, after the fall, which was a large transverse one, I found the bone bare underneath, above an inch. The stupid insensibility, in which he lay, and the slow pulse, with every now and then, raising his hand to the crown of his head, were to me, UNIVOCAL SIGNS, that his complaints proceeded from the concussion of the brain only, and that though the wound posteriorly was considerable, yet, that for the present, it demanded only plain, simple dressing. My principal attention was drawn to the symptoms of the commotion. The pulse were not only slow, but low, so I rejected the idea of arteriotomy, or other evacuations of blood. The medicines I directed, were chiefly of the nervous tribe ; castor, valerian, &c. in a decoction of the bark ; and, as it must, on the face of it, appear absurd, to order such remedies, without a correspondent diet, I directed veal-broth, beef-tea, and sometimes a little wine whey. The 18th his pulse were fuller and stronger ; and as he had no stool for three days, I directed a decoction, consisting of an

ounce and an half of Glauber's salts, dissolved in an half pint of wey, to which a table-spoonful of oil was added, to be injected, which produced a good effect. Still, however, the stupor and insensibility remained, and his moaning as constant as ever. The 19th, no way better, save that the pulse grew firmer; and, in the afternoon, his restlessness and anxiety encreased, but he still remained insensible! I directed a large blister to the pole, and between the shoulders. About one in the morning of the 20th, he grew so restless and outrageous, as scarce to be retained in bed. In this situation, I was called up; and finding it necessary to do something to calm this orgasm; on reflection, nothing appeared to me more rational, than sedatives. I directly went to the Apothecary's; and to four ounces of saline mixture, I added two drams of tincture of castor, and 30 drops of laudanum. Half of this I gave him directly, and waited the event. He insensibly grew calmer, and more composed, and in about an half hour, fell into a sound sleep. I then retired; but left directions, that in case he again awoke restless and uneasy, to

give

give him the remainder of the bottle, at what time soever it happened. At four in the morning, though more composed, it was given to him; and he slept quietly till 10 o'clock. He then awoke, much refreshed, and visibly clearing in his intellects, and his pulse much better. The blister produced a large discharge; and that night, though still mending, I ordered a repetition of the sedative, half of which I gave him myself, about 10 at night, but directed, by no means to give him the remainder, without first calling on me. He passed the night in good repose, and great tranquillity; and next morning, was surprisngly recovered, and so sensible and composed, that I judged my further stay unnecessary. The wound healed in some time, and he returned in a few days to his usual occupation, and, I believe, is still alive, and in good health.

## CHAPTER

## CHAPTER XI.

Method of Cure in Concussions.—Evacuations to be cautiously used.—Opiates mixed with the nervous tribe, the most rational and successful method.—Reasons and facts offered in support of this Practice.

EVERY violent injury to the head, to which the bones of the cranium do not yield, must necessarily, and according to the laws of motion, be communicated to the brain and medulla oblongata; just as a person holding a bludgeon in his hand, which, if struck, with great force, and not broke by the percussion, it communicates the shock to the hand and arm, &c. of the holder. If, in the first instance, the skull is fractured, reason is unimpaired, because the force extends no farther; as, in the second, if the bludgeon which is struck, breaks, the man who holds it, feels no injury from it. It is for this reason, that the symptoms

symptoms of concussion or commotion of the brain, are not confined to injuries or falls on the head ; they will be consequential to violent falls and shocks, received in other parts of the body, unattended with fracture or dislocation. IN ALL THESE CASES, it is the nervous system, that is chiefly affected ; and to remedy this, should be the chief object of the sensible Physician and Surgeon.

To this end, bleeding, in the first instance, to me seems very exceptionable ; for this reason : that for some little time after the accident, at best, but a partial circulation of the blood and animal spirits is kept up. Immediate evacuations, will by no means help to restore Nature ; but, if in an hour or two, or more, oppression, a full quick pulse, &c. appear, then, no doubt, venesection will be both prudent and necessary. The head should be close shaved, and chafed three or four times a day with the spirituous volatile embrocation, described in the last chapter—Lavender and rosemary, strewed with some powdered valerian, enclosed in fine linen,

linen, should be laid over the parts, after each embrocation.

To me it appears evident, from the Nature of injuries of this class, and from the attendant symptoms, that the shock received is principally communicated to the nervous system; and that the disorder should be deemed truly nervous. If, in this assertion, I am right,—and I think I am,—venesection, and violent evacuations should be sparingly used; but cephalics and sedatives, and the nervous tribe with liberality. A person is thrown from his horse, or receives some other external violence, in which, neither wound, fracture, or dislocation happen. (I am not here stating these injuries, which immediately endanger life, but such as frequently occur, and soon are relieved.) The patient remains, perhaps, for some little time senseless. When he recovers a little, he is disposed to puke; and it should be encouraged. He now finds himself inclined to sleep; and in some hours recovers, but, perhaps, may complain, for some days after, of weariness, and pains in his bones, or head, &c.

Here



Here are all the symptoms of a commotion of the brain in miniature ; and here Nature—the most unerring Doctor, points out the true means of relief ; and which we should labour to imitate in the more violent and dangerous attacks of this kind.

To recommend sedatives and opiates, in deliria, coma's, and other attacks on the brain, of the nervous train, I know, are liable to many great, and, if I am not highly mistaken, ill-founded objections. All complaints of this kind, however, it is admitted, proceed from an high degree of sensibility, as well as irritability of the nerves ; but will adding irritation to irritation, blister to blister, and the horrid combustion of all the phlogistic tribe combined, do away these complaints ? they undoubtedly will not ! If some happily (like the three children) escape this fiery furnace, it is to Nature, or its great Author, more than to their ill-directed tormentors, they are obliged for it. Yet this hopeful practice still goes on—  
*this occidit miseros crambé repetita !*

## C A S E XXXI.

IN June 1772, Miss T——, a very accomplished young gentlewoman, was attacked with a fever, with all the appearances of the nervous class. She was treated in the usual manner for some time, except, that blisters were not applied. The evening of the 9th day, she was attacked with frequent and profound sighings, and these, in some little time, were succeeded by shriekings, which, by 11 at night, became so constant, and uninterrupted, as scarce to afford the smallest respite. The afflicted father called on me, conjuring me, by our long friendships, to do something for his daughter, without being shackled by the other assistants. I could not resist his solicitations, though it was a good deal irregular. I called on the apothecary, and brought with me a small bottle, composed of valerian, castor, and thebaic tinctures. I gave her a tea-spoonful of this medicine, and stood by, to watch the effects. In less than three minutes, she found  
some

some intervals of ease, and in a very few more, the symptoms seemed charmed away! She slept for five hours successively; and soon after she awoke, a second attack commenced, though by no means so formidable as the first. I had directed in that case, that the dose should be repeated. It was so: She slept till 12, and from that time recovered very fast; and is at this day alive and well to attest the fact. What would be the consequence, had blisters, mock julaps, and all their farrago, so necessary to the Doctor and to the Apothecary, been administered? it is easy to tell!

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## C A S E XXXII.

MARY HALLORAN, servant to a lady in my neighbourhood, had been blooded in the arm, just on the flowing of her menses, for some pimples in her face. They were suddenly checked; she became oppressed, and in less than two hours, was strongly convulsed. By the violent contortions of her hands and arms,  
the

the orifice opened, and she bled profusely. It was repeatedly bound up, but the constant convulsions made every attempt, even when the finger was on the orifice, fruitless. I was requested to see her ; but I found all my address to stop the blood, whilst the fits continued, unsuccessful ! To check them, was the only means to save her life ; but instead of bleeding in the foot, emenagogues, and medicines of this kind, I sent for, and gave her a tea-spoonful of the sedative drops , and, in less than 3 minutes, all was calmness ! the arm was now bound ; her menses returned, and she was quite well by evening, though very weak. What a fund for reflection !

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### C A S E XXXIII.

THERE is, in the fifth volume of the Philosophical Transactions abridged p. 357, the well-attested case of a lady, in a fever, restless, delirious, and convulsed——They, at length,  
 agreed

agreed to give her large quantities of opiates ; and, in the course of three successive nights, she took 102 grains of laudan. lond. 3 drams of Venice treacle, and 4 ounces of diacodium ! though they procured no sleep, yet they greatly refreshed her, and made her sensible ; but the people about her being uneasy, on account of this uncommon quantity of opiates, in so short a space of time, obliged the physicians to alter their prescriptions.

Upon the whole, the age of the patient, his usual manner of living, and, above all, the symptoms and state of the pulse, should determine, as to the evacuations. A slow, full pulse, which generally attends this disorder (and the slower, the more dangerous,) in my opinion, is no motive to bleeding ; at least, I have never experienced any sensible relief by it. Some disorders, from the instant, are mortal ; *is it then, because we cannot cure, THAT WE ARE TO TORMENT ?* We are, when we study best to discharge our duty, but the Ministers of Nature ; AND IN TOO MANY INSTANCES, VERY POOR ONES INDEED ! Let us from her then  
only

only, draw our inductions. Valerian, castor, and all the nervous tribe, prudently combined with opiates, in very small doses, act as sedatives, and will greatly assist in curable cases; but if the patient be young and phlethoric, and has lived freely, the nervous medicines may be too heating. Seasonable bleedings, but particularly in the neck, or temple, with small quantities of laudanum, mixed with *sp. nitri dulc. sp. vitriol. ten. and fyr. de althea* will do good.

## CHAPTER

## CHAPTER XII.

Recent Fractures of the Cranium only, attended with no particular concomitant symptom—Fractures sometimes accompanied with concussion—illustrated by three Cases; the distinction and mode of treatment pointed out.—A Fracture, with slight depression, requires no operation.—A persuasive against hasty and unnecessary exertions in this way.—Signs of such Fractures, with several Cases in point, to justify the Practice.—Penetrating incisive wounds, to be treated in the same way.

**SICKNESS** at the stomach, puking, stupor and insensibility, immediately succeeding a violent injury of the head, will no longer be deemed, *even Equivocal* signs of a fracture of the Skull; as they are the constant Concomitants, and univocal signs of Concussion, but more especially the two latter symptoms. Bleeding at the

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Ears,

Ears, is from the same Cause ; nor will rigors, fever, &c. succeeding in some days after—these being the unerring signs of matter forming underneath. A fractured Skull tho' attended with a wound, in which the membranes and even Brain are engaged, is for many days attended with no remarkable symptoms. The Patient has scarce any Fever : [reason is not impaired ; and the whole man is collected. Instances however may be adduced, where severe Fractures have been accompanied with Concussion ; but in these Cases the Violence was so great, that the giving way of the Bone was not sufficient to break the force of the Injury ; and those who died, perished from the mere Concussion. It is a nice point of Discrimination ; complicated Cases of this kind rarely happen, and I shall endeavour to elucidate the business, by three remarkable instances.

C A S E



## C A S E XXXIV.

PATRICK FLANAGAN, a sailor, aged about 19, fell from the round-top of a ship, almost in my view, head-foremost, which struck on the ship's gunnel. He was taken up motionless and senseless, and I saw him immediately after. He received a large contused wound, which extended from the upper part of the coronal, the entire length of the parietal bone of the right side, and close to the future. The coronal bone alone was fractured, and greatly depressed. I hastily dressed this most deformed wound, and sent him to the Hospital, without the smallest hopes of recovery. He remained stupid and senseless the remainder of the evening; and in the night, a smart hemorrhagy came on, which was soon mastered. He continued insensible, and frequently convulsed, with scarce any pulse, till ten next morning, when he died. Anxious to know, why he continued in the state of insensibility to his death, *notwithstanding the fracture*, I carefully examin-

ed the parts in about an hour after dissolution. After sawing round, and raising the roof of the skull, I found the dura-mater detached from the bone, the whole length of this extended fracture, but adhering with the pia-mater to the brain. The membranes and cerebrum were so remarkably sunk down, that a pigeon's egg could scarce fill up the hiatus ! Notwithstanding this *most uncommon depression* of the brain, I found *no extravasation ; no ruptured vessels !*—In every instance besides, the parts of the brain appeared as usual. No doubt can arise, but the concussion was the cause of his death ; and that mere fractures never exhibit such symptoms.

### C A S E XXXV.

JOHN BYRNE was received into the Hospital, the evening of July 19, 1791, having just received a most violent depressed fracture on near the superior part of the coronal of the left  
side.

side. At the instant he fell ; and after some little struggles puked ; and seemed then to breathe easier, but remained in a state of insensibility. Such was his situation when brought to the Hospital. A longitudinal wound of about an inch, with the depression, were the only appearances. Upon passing the probe through this opening, it passed to a considerable distance. I extended this opening ; and upon removing some of the integuments, the nature of the fracture appeared. As I found there was space enough from the edge of the fracture, to apply a crown of the trephine, without encroaching too near the longitudinal sinus, I set to work here, and removed the piece. Upon introducing the elevator, the fracture extended down the coronal. I raised some parts, and removed others ; but the symptoms of concussion remained ; and he died the evening of the next day. On examination, the dura-mater was no way tore ; but the brain over the injured part, was sensibly depressed and sunk in. On the whole, I collected enough to satisfy me, that the lad would have recovered of the fracture, if the concussion had not happened.

## C A S E XXXVI.

A LAD of about 18, distant 3 miles from this City, in a dispute, was knocked off his horse ; and on his fall, received a most severe blow on the posterior part of the parietal bone of the left side. He was taken up soon after, and carried to his father's house, just adjoining. A young gentleman was soon after sent for ; the head close shaved and carefully examined. He had no symptoms, but those of concussion. He remained stupid and insensible ; and no wound appearing, the cause was very properly attributed to this ; and such medicines as were deemed proper, were, I suppose, prescribed. He remained in this state of insensibility five days ; and the morning of the sixth, I was called upon. The poor father gave a very affecting account of his situation ; said he was certain he could not recover ; and that since midnight, he could not even swallow any kind of drink. From this statement, I told him, it was idle to hope for assistance ;

and recommended him to save his money, and go home. To do this, he said he could not ; for that he had been importuned by all his neighbours for two days past, to call upon me ; and that to return without me, he could not. I found the young man in a low, languishing way. I felt his pulse attentively, and perceived them steady and regular. Some white wine being in the house, I mixed some of it with a little water ; had him raised up in the bed, and gave it to him myself. He drank it with great ease. I asked him some questions, which he answered tolerably well. I then proceeded to an examination of the head. Neither wound or contusion was visible ; but on the touch, I was convinced, that there was a very large fracture, extending from the posterior part of the parietal to the occipital bone ; and that the fractured part of the parietal, was hitched under the uninjured part of the bone. The depression, however, was not very considerable. I told the people his situation, and even pointed out to them the fracture ; but the youth was too weak to attempt much ; and besides, he had not sufficiently recovered from the effects

fects of concussion. However, that something might be done, I removed the integuments, and then the injury became visible to every one. The operation, though expeditious, and attended with very little loss of blood, had weakened him so, that his friends apprehended he was dying ; but of this, I had not the smallest dread. I gave him after this a glass of wine ; and he appeared very composed. The operation was now easy and safe ; the trephine being to be applied at the edge of the fractured parietal. I told them, it was not to be attempted for a couple of days, or till the effects of the concussion disappeared ; as the present symptoms had no relation to the fracture.

I directed bark, valerian and castor, in substance to be given, about a tea-spoonful every four hours. A nervous julap was also directed of six ounces, to which I added an half dram of thebaic tincture. Seasoned broth, a new egg beat up, and gruel with wine, were also to be given at times, and by no means too sparingly. Next morning, the father came to me with joy in his eyes, and told me he passed a good night,

was

was quite clear and collected, and greatly recruited. I desired the same process to be adhered to 'till next day ; and that an operation would then come in, with great probability of success. I heard no more of him, 'till the morning of the second day ; and having then other engagements, I could not attend him. He was greatly distressed ; but I desired him to call on the person first sent for. For though he might have then over-looked the fracture (as indeed, would many more,) yet, it was a lucky circumstance for his son. For if he had then observed it, and proceeded directly to an operation, it would probably have ended fatally, on account of the subsisting concussion.—The youth was trepanned, and happily recovered.

Here then a fracture with concussion is established, and the signs are as clear as possible. In such a complicated case, what is to be done ? the concussion being, if severe, the most alarming, is to be first and principally attended to.

There being no immediate pathological signs of a fractured cranium, but what can be drawn from the touch, the probe, and the circumstances

cumstances attending it ; to these we must refer for information, *in the first instance*. If the hurt be attended with a wound, and that the pericranium is bare, it will be proper to dilate it ; and on the next dressing, we can be more decided. If to the denudation of the bone, a roughness of it be added ; that the injury was very violent, and no heaviness or stupor immediately supervening, little doubt remains of the existence of a fracture. However, this will not be sufficient authority, to proceed to an immediate operation, as this very interesting chapter will demonstrate. If there be no wound, and that the integuments appear contused, a compress wet in spirits, may be laid over the parts, the patient bled ; and in a day or two more, weighing maturely the nature of the injury, and the clearness of the patient's perceptions ; you will then consider, as the skull only has sustained the injury, whether it had, at the same time, power sufficient to resist it. One conclusion we may generally draw on these occasions ; which is, *that the slighter the injury, the integuments sustain in severe*



*vere hurts of the head, the greater the probability, of the bone's being fractured.*

From this account of fractures in general, the result of above 30 years diligent observations, and most extensive practice ; many inductions, highly interesting to the Public, and to Surgery may be drawn. It may probably prevent Surgeons of eminence IN FUTURE, from gravely relating, their having removed the flesh from different parts of the skull—Nay, often trepanning, in search of some latent fracture ! A fracture ought only to be sought for, where the injury is received. No danger can arise from delaying this enquiry for two or three days ; and if it shall now appear, that many fractures require no operation whatever, our solicitude about latent fractures will cease. For, it is by no means a consequence, that because, the skull is fractured, trepanation must follow ; and this proves, how little attention has been paid in these later days, to the ends proposed by this operation. For a fracture of the skull, merely as such, will heal as safely, as that of the leg or the arm.

arm. It is where the bone is depressed on the brain ; it is when we apprehend, that the depressed parts may form acute angles, which in the course of many days, may cut through the membranes, and wound the brain itself, that the operation becomes necessary ; nor can I conceive any apparent objection to this doctrine, but what may arise from a supposition, that as a fracture of the head, necessarily implies a separation of the dura-mater from the cranium, at the injured part, this circumstance alone, makes the operation indispensable. But after trepanning, do we not introduce the elevator, to raise the depressed parts, detached from the dura-mater ; and do they not afterwards firmly unite ? where there is a fracture with a slight depression, which demands no operation, why should not they again reunite ? they undoubtedly do !

In fractured heads, when upon removing the integuments, a simple division of the bone only appears, and the depression at its edges but slight ; when by a pressure of the finger *here*, no increased pain or heaviness appears, there is every reason to expect, that

we have little else to do, but to dress the wound lightly with soft lint, nor suffer it to make much progress in healing for 12 or 13 days ; when, if no heaviness, drowsiness, or stupor appear, we may conclude all is safe within ; and then treat it as a common wound. But where there is any considerable depression of the bone, or the fracture at all extended, the sooner the operation is performed, the better. For though, in the first instance, we may safely delay the operation ; yet, I think it much more safe and prudent in fractures of the second class, not to wait for symptoms of depression.—Here follow a few instances of the success of this practice, in the more simple fractures.

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### C A S E XXXVII.

ANN MITCHELL, in September 1760, received in a riot, a violent stroke of a stone on the forehead, and near the frontal sinus. Next  
 morning

morning she came to me, a kind of *refugium peccatorum*. Upon examining, I found the bone rough and bare. On dilating the parts, the bone was so clearly divided, that I could, and did introduce through the aperture a probe to the dura-mater ; but there was scarce any depression ; and she complained, that the cold was piercing into her brain. Bleeding, and a light antiphlogistic course was pursued for some days ; the parts lightly dressed, and carefully guarded against the cold. In about 12 days, I suffered the wound to heal ; and for many years after, to my knowledge, she enjoyed good health, and is probably yet alive.

C A S E

## C A S E XXXVIII.

IN a very short time after, Mr. S. Goggin, in riding through the town, was thrown from his horse, and a car loaded with butter on the instant passed over his forehead, fractured the frontal sinus, tore off part of the ear, and he was likewise severely wounded on the occiput. Some parts of the bone being loose, I separated from the integuments, and replaced others more adherent ; and dressed the entire with lint. As he was above sixty, I neither bled nor kept him too low. In some time, the fractured parts formed a solid union, the wounds healed kindly ; and for many years after, he enjoyed perfect health, without experiencing the smallest inconveniency from this severe injury !

C A S E

## C A S E XXXIX.

Mrs. GROGAN, a shop-keeper of this city, in letting down her window, fell into the street, May 20, 1760, and received a violent contusion on the forehead, from a projecting stone in the pavement, besides other hurts of a more trifling nature. Next morning I was sent for ; and found a considerable swelling, which to the touch, seemed to contain a fluid; but as I had often seen tumors of this kind subside in three or four days, by the use of compresses wet in spirits, I treated this in the same way. The tumefaction however continued; and in five days after, I proposed opening it, which she would not permit. The 6th of June, she again sent for me. The tumor was still the same ; but the fluctuation not so sensible. I opened the part, and a good deal of coagulated blood discharged. She complained all that and the next day, of great pain, and bloody sanies came from the sore. I now found the cranium

nium not only bare, but a considerable fracture of the coronal, with some depression. On removing part of the integuments, and pressing with my finger, it remained firm to the touch, nor did she complain of pain or heaviness from it. I kept the wound open some days longer; and finding no alarming symptoms appear, I suffered it to heal; which it did about the end of the month. I recommended her to keep the forehead warm for some time, on account of the tenderness of the parts, and thinness of the cicatrice. This she neglected. In some days after, leaning over a garden wall, with the wind in her face, she was seized with a violent pain in the parts, and as she described it, piercing into the brain. She went home, went to bed, slept little, and was in an high fever all night. I saw her next morning, found the forehead greatly swelled, and let out a considerable quantity of matter, formed in a very few hours. This complaint I attributed to the cold, the tenderness of the parts, and the callus not being sufficiently formed. In some time it got well; and she took care to

keep the parts covered from the external air, and suffered no further complaint.

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### C A S E , XL.

JULY 12, 1761, a gentleman's daughter, a mile from this city, and aged about 4 years, fell over the turn of a stair-case, a considerable distance, and was pitched on her forehead. She was immediately taken up, apparently dead, with her eyes starting out of their sockets; but in about three minutes she discharged her stomach, and recovered. Soon after I was sent for. She seemed quite sprightly, without any complaints; but on an inspection of the parts, I perceived the coronal bone, on its anterior and superior part, and bordering on its center, beat in; for the depression was so considerable, as not to admit a doubt that both tables were engaged. Considering the pliability of young bones, and being so near town, I requested



I requested assistance before any resolution should be formed ; and Dr. Lloyd and Mr. Mahony were sent for. We agreed to open the integuments of the injured part, and a good deal of blood followed. We found the depression considerable, and the surrounding covering thin. The wound was lightly dressed, the child bled, and next day was to determine, what further was to be done. She passed the night calm and easy ; and it was agreed to keep the wound open for some days, and the child low and cool. The 14th, no alteration, except a tumefaction on the nose. The 15th, she discharged about three ounces of blood by the nose. The 16th, a swelling appeared under the symphysis of the lower jaw. This gradually lessened. In a word, the fore was suffered to heal ; which was accomplished by the 28th. She never since suffered the smallest inconvenience ; but the depression in the bone was for a long time sensibly perceived. However, I must remark, that had this child been at the age of about 13 or 14, when the accident happened, delaying the trephine might be attended with dangerous consequences. For it is

an object of great consequence to know, and to be assured, that it is not a mere fracture that makes the operation necessary, but the consequences of it. That is, where the bone, by its depression, opposes the pulsation of the brain; and probably points of it, by degrees wearing through the dura and pia-mater, and even wounding the brain itself. Now, in young subjects, the bone oftener bends than breaks; and, of course, less apprehension of points and angles of it forming within. I have often been called in to children, with supposed fractures, particularly of the fore arm. I have found the bones, instead of being broke, bent in, like a green stick; and I have restored them to their usual form, by very gentle force.

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### C A S E XLI.

A B O Y, about six years old, the son of a gentleman, six miles distance from this city, received a kick from an horse, on the superior middle part of the occiput, close to its connections

nections with the parietals, in the evening of the 25th of May, 1768. I visited him early next morning, and on examining the small wound inflicted, plainly perceived the bone fractured and depressed. I laid the part bare, and found the fracture of the breadth of a silver crown, and one part beat in above one-fourth of an inch from its level. I would have immediately trepanned, but for the very critical situation of the injury; but to avoid any censure, I desired Mr. Mahony to be called in. We saw him next morning; and every circumstance minutely considered, we agreed to postpone any operation, 'till some threatening symptoms justified its necessity; but desired the child to be sent to town. In some time, nature did her own business, by detaching the fractured parts; and the boy got perfectly well.

## C A S E XLII.

SAMUEL HARTE, a clothier of this city, in a riot about 3 miles from town, received some injuries ; but the most severe, was a contused wound on the upper part of the right parietal, of about two inches long, with a bare bone and fracture. Though the fracture was very visible, and extended the length of the wound ; yet, after removing some of the flesh, I found very little depression, and the pressure of my finger produced neither pain nor heaviness. As a trial for life would be the consequence of his death, I acted with great caution. I brought two or three gentlemen to be ocular witnesses of the fracture ; and though, every thing considered, I would act a more prudent part in trepanning him, than in omitting it ; because, in case of death, no blame could lie at my door by the operation, as having done every thing for the sick ; whereas, by its omission, his death might be imputed to neglect or ignorance : However, always considering

my own peace of mind of more importance than pecuniary rewards, or public applause or censure as I saw no apparent necessity for the operation, I declined it, but otherwise paid great attention to the symptoms. In the course of 4 weeks, the bone became covered, he never felt the smallest inconveniency afterwards from this injury. It happened the 10th of May 1786, and he has since enjoyed perfect good health, being a native of this city.

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### C A S E    XLIII.

M'NAMARA, a fisherman, some time since, encroaching too near the precincts of our Salmon-weir, as many of them do, was attacked by the guard; and with other injuries, he received a violent contusion on the middle of the coronal bone. He remained at home for five days, and was then brought to the  
Hospital.

Hospital. His pulse were full and strong, and he complained of a violent head-ach. On introducing a fine probe, through a small opening in the fore, I perceived the bone rough and bare. I immediately removed the bruised integuments from the bone, and suffered the parts to bleed freely, which I thought would afford more immediate relief than the lancet. Next day he complained much of his head, and I found a fracture without any depression. I ordered powders of nitre and jalap, to open the body, with the saline mixture, and a large blister between his shoulders, which was to remain on for 24 hours. The effects of the blister removed this complaint, and things went on well till the tenth day from the hurt, when he was seized with most severe shiverings. I should have deemed these, the symptoms of matter forming on the brain ; but I suspended my opinion for two reasons. The fore looked florid, and discharged laudable pus ; and in the course of many hundred cases of fractured skulls that had fallen to my share, I never met with a single instance, where matter was formed on the dura-mater, with the alarming symptoms,

toms, attending such, as are subsequent to wounds of the pericranium. (See chap. 3 and 4.) I therefore ordered him the peruvian bark in substance. In about four days, these symptoms disappeared, though frequently recurring during that time; and it is very many months since he has been abroad and well.

From these few instances, to which more could be added, it becomes demonstrable, that fractures of the cranium, merely as such, do not necessarily require the trephine. It is only where they are accompanied with considerable depression, or that pieces of the bone are nearly detached and press on the brain, that this operation becomes indispensable. It must then become a necessary conclusion, that wounds of the bone, by incisive instruments, whether penetrating through both tables to the brain, or only partially wounded, have less occasion for any operation, tho' too frequently performed. To what has been already said, one striking instance to this point, will be as conclusive as one thousand.

## C A S E XLIV.

EDWARD POWER, at the time a waiter at a tavern in this city, and since then a porter, came at an early hour to my house, on the morning of the 24th of June, 1760. He had been all night rioting at the fair, and received a desperate wound from a back sword, on the coronal bone. It stretched obliquely from its upper extremity through the orbit, forming a frightful chasm, in which were included the integuments, bone, membranes, and brain ! It bled profusely for some time, as might well be supposed. He came to me bare-headed, without the smallest covering to this wound ; and had thus remained in the open air for above two hours. Considering the nature of the wound, the intemperance of the fellow, and its being so long exposed, I concluded a violent inflammation of the brain would follow. Yet, except two or three bleedings, and a few other anti-



antiphlogistics, this man got completely well in five weeks, without the smallest unpleasant symptom. La Motte mentions a still more severe wound of the head, which healed with very little trouble.—

Vol. 2. p. 343.

## CHAPTER

## C H A P T E R   XIII.

The Trephine formerly rarely applied.—The indiscriminate use of this operation, for a considerable time past much to be lamented.—As cruel and dangerous, not to be attempted, without manifest necessity.—The wanton abuse of it censured.—The dangerous principles of concussion and extravasation considered.—The wonderful advantages of this operation, when judiciously directed.—Depressed fractures divided into simple and compound—When early attended to, seldom dangerous.

**T**HE operation of the trepan is very ancient; but being confined to particular parts of the head, at times, when anatomy was little cultivated, it was seldom performed, without great caution and circumspection. For it was forbid, over, or near the sutures, over the os  
fqua-

squamofum and occipital bone. And this explains an anecdote preserved in our history, reflecting high honour on the ancient state of phyfic in this country. For *Connor Mac Neaffa*, King of Ulster,—that generous protector of the literati of his day, and cotemporary with Julius Cæfar—having had his skull fractured in battle, and his life almost difpaired of, his first Surgeon *Finighin* propofed this operation, as the only means of relief, provided the nobles of his country would protect him from cenfure or injury, in cafe it did not fucceed. The operation was performed, and the King recovered !

The obfervations of the laft and prefent centuries prove, that there are very few parts of the head, on which the operation of the trephine may not be performed when neceffary. And this information fhould certainly involve in itfelf another enquiry ; namely, *What are the particular cafes which neceffarily demand any operation ?* However, no fuch enquiry has been fet on foot, at leaft with any effect, TO SHEW WITH PRECISION, thefe cafes which require fo  
 fevere

severe a trial ; *and concussions of the brain, deposits of matter on this organ*, fractures simple or compound, &c. have all for their *panacea*, the trephine !

Let us in a few words, examine the nature of this operation, not in a medical, but in a moral light. Not from the good resulting from it, in thousands of instances, but from the injury the constitution receives, and the patient suffers by it.—A fracture of the skull, by what means soever inflicted, is sudden—is instantaneous. A wound, with a considerable fracture and depression may be the consequences ; but if this is not accompanied by severe concussion, which is rarely the case ; we see no alarming symptoms accompany it ; except the consequences of compression, and these rarely appear, sooner than the sixth, ninth, tenth, or fifteenth day. Let us now see what are the means used by art, to relieve this complaint, and snatch the patient from death. Some make use of a crucial incision, through the integuments and pericranium to the skull ; but the best and most expeditious method, is, a circular

cular sweep, including in its vortex, all the parts necessary to be removed; the flesh is carefully separated; and the pericranium torn from its adhesion to the bone. A considerable opening is now made in the solid uninjured bone; the dura-mater exposed; and at best, the Surgeon has secured to himself employment enough for a couple of months, to bring things about again! Is an operation of this consequence, infinitely more severe and violent, than the cause that gave rise to it, to be wantonly or capriciously attempted? Will bare suspicions of its necessity, be sufficient to justify the attempt? Should not its necessity be apparent; or is it a consequence, because we cannot cure, we should torment?

I am led into these considerations, from a perusal of two memoirs of M. Quesnay's, in the first and second volumes of the works of the Royal Academy of Surgery. In these he has collected a number of the most dangerous that ever were attempted; and the point he has in view, is to encourage Surgeons to still  
greater

greater acts of temerity in this line ! for instance : Mr. Caringoët applied seven different crowns of the trephine, to raise a piece of bone lodged in the longitudinal sinus, and *which kept the patient in a most profound lethargy till removed* ! M. Marechal, on another occasion, he tells us, made use of no less than 12 crowns of the trephine. Another removed almost the entire coronal ; and not content with the trephine and elevator, he had recourse to saws, files, wimbles, mallets of lead, gouges, &c ! I will not enter into a critical enquiry, as to the causes that gave rise to these operations ; nor to the necessity of performing them ; but with great deference to such respectable authorities, I am not nevertheless afraid to affirm, that no curable injury that the head ever received, could, in sound practice, justify them ! There is an old saying, *Periculum facere in corpore vile* ; and, I should suppose, these gentlemen might be rather tempted to try, how far Nature was capable of sustaining human outrages, than any good they could expect ! As to the last case of M. De La Peyronie, I affirm, that I have effectually cured a great variety of ex-

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tended caries of the bones of the head, accompanied with fordid strumous ulcers, by the frequent application of the actual cautery, to the parts immediately affected. A remedy, tho' formidable in appearance, is nevertheless attended with *very little pain, and most astonishing success* ! nor had I ever once occasion to use the trephine !

The operation of the trephine is undoubtedly a very painful one, and should by no means be performed without good authority for so doing. In concussions of the brain, it should never be attempted ; for here there is no fracture—no extravasation ; nothing can give the least countenance to it. I had from an early period fixed my mind, as to this point, from the frequent opportunities I had of examining and reporting to inquests and juries, the state of the different people who died this way. I will not deny, but many instances could be adduced, where people have recovered of these complaints, after trepanning ; and that the cure has been attributed to the opera-

tion. But I am certain it had not the smallest share in it, whatever it might have, in adding to the danger of recovery, and to the delay of the cure. It having appeared to the *Academy of Surgery*, that of people who died of concussions of the brain, when opened ; in some, an extravasation of blood appeared ; in others, none—a question naturally arose ; namely, what are the concomitant symptoms of concussion with extravasation ; and what these, where no extravasation exists ? M. Petit attempted to dispose of the question thus. Loss of sense and speech immediately succeeding the injury, are indubitable proofs of a simple concussion ; when they succeed in some time after the accident, they are the proofs of extravasation ! Monf. Le Dran, (*Observations de Chirurgie*, T. 2. p. 134.) goes further to determine this question. He thinks the immediate loss of sense the effect of the concussion ; but the lethargic insensibility following it, the univocal and decided proof of extravasation. Mr. Pott seems to adopt this doctrine ; and thinks the operation should follow. It is a question



question of great magnitude ; and much service will be rendered by a thorough investigation of it.

To a certainty, the immediate loss of sense and speech, can be attributed to concussion ONLY ; and its longer or shorter continuance, to the same cause, and no other ! the symptoms of extravasation do not appear for some days after ; and are fact symptoms of a different nature, and any accurate observer can easily distinguish them. It has been affirmed, to justify the necessity of trepanning, that extravasated blood produces the same appearances in a short time that concussion did. It certainly does not ! Every man of tolerable practice in this way, must have met with *particular* cases, where, upon removing the bone in the bore of the instrument, even before the depressed parts are raised, blood pours out rapidly, without any previous lethargic appearance. The blood that sometimes pours out, is the consequence of small vessels ruptured by the stroke or fall. This surely cannot make

so severe or awkward a pressure on the brain or its membranes, as pieces of the bone itself, beat in, and confining the motion of the brain; yet, we frequently meet with considerable fractures, with depression, which though many days unrelieved, exhibit no comatous or lethargic appearances. But in wounds of the pericranium, ending in abscess, and too often in death, even when this matter is formed, are the symptoms similar to those attending concussion? They are not! instead of an immediate deprivation of sense and speech, the symptoms come on gradually. The appearance of the fore gives the first alarm. Violent tremors, sickness at stomach, head-ach, and fever follow, without any immediate stupidity or insensibility; and in many instances, they preserve their intellects to death!

It may be probable, that the same injury that produces concussion, may SOMETIMES produce extravasation, although I never met with a single instance of it; but here the matter must rest; since the continuance of the symptoms

symptoms ought not, nor cannot be resolved into the latter appearance, nor do I think, can by any means justify the operation. If, indeed, the signs of concussion disappear, and that in three or four days, formidable appearances of another nature, make their approaches, then the cause is to be sought for, and the proper relief offered. Should signs of matter forming on the brain appear, or these of a depressed bone—for even in both instances, the appearances differ—then recourse must undoubtedly be had to the operation.

That violent blows, falls, or other external injuries, do often produce extravasation, is what every one knows. To what other cause can we attribute the formation of matter, and sometimes of water, on the membranes or surface of the brain? But do not the gradual approach of the symptoms proclaim the cause; and are these symptoms such as accompany concussion? Every Surgeon knows they are not! Again; a severe fracture and deep depression of the bone, will, if not relieved, bring

on heaviness, dozing, lethargy, convulsions, and death ; but do any of these appearances bear any relation to the IMMEDIATE loss of sense and speech, attending concussions ? none, that I know of. In more than an hundred very extended fractures, with severe depression, that I have seen unrelieved for some days, yet, in all, they have preserved their senses—indeed some, after passing five or six days, others later, have been attacked with heaviness, dozing, and lethargic appearances, the consequence of depression ; and though the cause existed from the first moment, yet the effects of this cause gradually followed. It must not, however, be denied, that in some cases, loss of sense and speech immediately succeeded, *in a few fractures* : in some, they went off, when the cause of concussion was removed ; in others, not, till the pressure of the bone was removed ; but what does this prove, but the effects of a double injury ? A fracture, accompanied with concussion ! Mr. Pott supposes, that the continuance of the symptoms, may proceed from extravasation ; but can a stronger

proof

proof be adduced to oppose this opinion, than the instance of Mr. S. (see case 28.) this gentleman laboured under most severe symptoms of concussion for eighteen days, without the smallest remission ; and yet got a complete cure without the interposition of the trephine ; and the operation most probably, at any period of this complaint, would close the scene in shades and death : to a certainty, it could not promote his recovery ! But is not the bone's resisting the impetus the cause of concussion ? How can this be succeeded by extravasation, when the bone and membranes are always found uninjured ?

Having, I hope, with *precision*, pointed out the cases, in which this operation should not be attempted ; the following sheets, will, I apprehend, prove its astonishing utility, where it is absolutely necessary. If professional men have spoken of it with diffidence ; have lamented its uncertainty in too many instances, it most certainly must have proceeded from their not taking down the cases immediately ; or for  
want

want of a sufficient number of cases, to ascertain the facts. Through some defect in our police, *or from the horrid principle, that the increase of the Revenues of the Crown, are preferable to the health and morals of the people*; or from whatever cause originating, yet, certain it is, that our malt spirit, called *Whiskey*, is disseminated through every part of the kingdom; nor can the smallest village be seen, without three or four notices hung up at wretched cabins—"LICENSED TO SELL SPIRITS!" Thus fairs, patrons, and public meetings begin with festivity, and end with broken skulls! This is the best apology I can make for my well-earned, though very unprofitable, experience in this department of my profession.

I distinguish fractures of the head, into simple and compound. By the first, I mean, those in which the cranium is broke in one place only, with or without a wound. By the second, where there have been two or more fractures on the same bone. Every fracture with  
depression,

depression, necessarily demands the operation ; and though some particular cases may be adduced, where Nature has somehow or other brought about the business of healing, yet, it is by no means to be trusted to ; and the Surgeon is inexcusable who fails to attempt, at least, to propose and press it. I have seen many fatal effects from this omission. I remember to be consulted three times in the course of one week, by people from the country, with fractured skulls. One laboured under this complaint eight days ; the second, twelve ; the other fifteen, and all were perfectly clear in their intellects. They came seemingly determined to submit to the operation, but considering themselves free from much complaint, they returned back, and all died in the course of a very few days after. One, I remember in particular, who rode to town and back, died the day after.

Simple fracture of the cranium, with depression, when relieved on the spot, or in the space of two or three days, almost always terminate

minate happily. In the course of more than 200 accidents of this simple kind, I cannot recollect a failure in a single instance. A dull recital of such cases, would only swell up this work, without adding to the bulk of information, which is my only object. I shall, however, select three cases, because they are curious.

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### C A S E XLV.

IN May, 1773, a Dutch sailor was brought to the Hospital, with an extended fracture on the left parietal bone, with considerable depression, received from a soldier in a riot the preceding day. I proceeded to the operation in the presence of a good many gentlemen; but, so thick a skull, I never met with! In a word, it took me 15 minutes to reach the dura-mater, though I have a light hand, and operate with  
more



more expedition, than the generality of my brethren. The depressed parts were raised, and the man did well ; and has been here two or three voyages since. I introduce this case, as an instance of an uncommonly thick bone *only*—for during some part of the operation, I was uncertain how the business would end on this account,

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## C A S E XLVI.

IN June, 1781, the coachman of Mr. White, got his skull fractured in a riot, and was brought to me soon after. The coronal bone on the left side, and near its junction with the parietal, was the injured part, and the bone was considerably beat in. I removed the integuments, and proceeded directly to the operation. On taking out the piece in the crown of the instruments, near three ounces  
of

of liquid blood poured forth, and on raising the depressed parts, more followed ; yet, this man was as clear in his intellects, before and after, as ever he was. It need not be added, that he did well, in the usual time,

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## C A S E XLVII.

A CHILD, of about seven, was admitted into the Hospital November 15, 1784, having just received a kick from an horse, by which the right side of the coronal was fractured, with considerable depression, and the integuments were much contused, but not broke.—On the spot I removed the flesh, but it being late, I deferred the operation to the next day. I found him then flushed in the face, his skin hot, and his pulse feverish ; but I by no means deemed this derangement, since the preceding evening, to arise from any consequence of the hurt, as I had never met with a similar complaint,

plaint, to follow so soon after a fracture, or indeed, after any external injury of the head. I proceeded to the operation, raised the depressed parts, and dressed the sore. Deeming the fever a matter totally distinct from the sore, I ordered small doses of nitre, with about a grain of jalap, to be given once in four hours, with the saline julep, till the bowels were two or three times emptied. He, however, passed an indifferent night, being very restless, hot, and subject to starting. Next morning I directed blood to be taken from the arm, and the saline julep, with *sp. nitri dulc.* and *fyr. de althea*. The evening of the third day, the small pox began to appear. It was of the distinct kind; but he had a plentiful crop! the sore went on well, and he got cured in the usual time. This complex case, was out of the common line, and proves how much a diligent explorer of Nature's laws, and Nature's works may depend upon his observations.

## CHAPTER

## C H A P T E R XIV.

A Persuasive against wanton recurrence to the Trephine—A Case, where its repetition was unavoidable—A second to prove its utility—A repetition of the Trephine, seldom necessary in extended Fractures—The great advantages produced, by a careful management of the Scalp.

**T**H E removing of the integuments, being in itself an operation extremely painful, and the exposing of the dura-mater to the access of the external air, being by no means exempt from danger, the humane and conscientious Surgeon should study to alleviate these distresses, which he himself may be as much exposed to as other people. Instead of seven, and of twelve crowns of the trephine: instead of the auxiliary aid of *gouges, mallets, files, &c.* he should study to relieve Nature in the gentlest

tlest and safest manner. There are very few fractured skulls—*I am certain there are none*—that demand such terrible repetitions! To avoid these, he should be very circumspect, as to the place of election; not but that there are particular cases, which make a repetition of the operation unavoidable.

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## C A S E XLVIII.

THE daughter of one Doherty, a rope-maker, was run over by a servant of the late Engineer General Eyre's, riding furiously from Castle-Connell to Limerick, and the parietal bone of the left side beat in surprisingly. In about an hour after, she was brought to me, quite composed, and seemingly in little pain. I found the mischief so extended, and the depression in the center of the fracture so profound, as to demand repeated crowns of the trephine.

trephine. I requested of Mr. Wallace, a military Surgeon, and Mr. Pierce, to assist me in this charitable business. On removing the integuments, much blood poured from different small arteries. The pressure of different fingers on the scalp, and over these little fountains, soon restrained the blood. I perforated at the lower edge of the fracture, and again on its upper ; but two elevators, though acting in concert, could not come under the center of the depression. We saw the necessity of making more openings, and accordingly one was made on the anterior, and the other on the posterior part of the bone, in parallel lines : four levers were employed at once, and after some little efforts, the parts sprung back with surprising elasticity to their original place, and appeared quite close and compact. Notwithstanding the great extent of bone laid bare, and the different openings in it, yet not the smallest accident, or disagreeable symptom followed. She got well in the course of about eight weeks, is still alive, and has been since the mother of many children.

How

Here the necessity of these different perforations was manifest, since the depression must certainly remain, if not performed ; and what the consequence would soon be, the following melancholy recital proves.

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## C A S E    XLIX.

THE evening of the 13th of May, 1784, Patrick Casey, a gentleman's servant, aged about 18, being somewhat in liquor, and leaping a vicious horse, he was thrown off; and the consequence was, a considerable fracture on the right side of the coronal bone, near the temple. I was prayed to visit him next morning, and finding part of the fracture pushed under the sound parts, in its lower extremity, I desired the people to send him directly to the Hospital, and that I would charge myself with his attendance. But this he would not com-

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ply with, saying, he was willing and able to pay for advice and assistance. I sent for a military Surgeon of my acquaintance, who was kind enough to attend me on many occasions. The apparatus was ready, and I was just going to proceed to the operation, when a Surgeon of the city came in, being, as he said, sent by his master. I intended to perforate the bone, just on the edge of the fracture, where the bone was locked in, but this was opposed. It was said, that trepanning so low down, would leave a disagreeable deformity, as it surely would ; and that the end of the operation would be as well answered, by operating on the upper part, where the injury would not be so much in sight. In vain, I observed, that the elevator, from this place, could not reach the center of the depression ; and even though it should, how could it promote the elevation of the bone, wedged in under the other extremity ? I saw the friends of the boy, as well as himself, wish to have it done so. I trepanned, introduced the elevator, but could make no impression, the lower edge of the fracture being  
beat



beat under the found bone. The end of the operation being by no means answered, I proposed a second perforation, where in fact, it should be at first performed. But it was observed, that, as the parts seemed open, and a free issue given to adventitious blood or pus, no danger could be apprehended, and the issue of matter would gradually detach the bone, which would probably come away in splints, which, indeed, has sometimes happened, though never to be trusted to. The parts were carefully dressed ; but the dura-mater never assumed a right colour. However, his spirits were good, and he had no complaint, but what arose from the fore itself. The discoloration of the dura-mater, made me try the effects of the elevator the 19th, and again the 22nd, but ineffectually. He was up every day. The 28th, he looked out of the window for some time, and towards night-fall, he grew remarkably hot, and had two or three shaking fits. This alteration was ascribed to his making too free with himself ; but I, who study Nature attentively, saw at once, that

there was a formation of matter, and dreaded the consequences. Next morning I sent for my friend, and for the gentleman who opposed the second opening ; but he was absent. Ever considering the life of man superior to chirurgic Astutia, and scorning to shelter myself under imaginary causes, where real ones existed—I told the people, that these alarming symptoms proceeded from the constant and uniform pressure of the broken edge of the bone on the brain ; and that any chance, yet remaining for recovery, must be procured by a speedy removal of the cause. With much difficulty, they consented to a second operation : the depressed part was soon raised up to its level ; but, alas, the mischief had been already compleated ! that day, and the next, he seemed somewhat lighter ; but about ten at night, his neck was observed to be covered with a bloody ichor, issuing from the fore.—Next morning his pulse were more languid, and the dura-mater quite black. Towards evening, the bloody ichor encreased. He became slightly convulsed, with an incipient stupor.

por. About ten, the substance of the brain poured forth, and he expired next morning !

In the course of much more than thirty years practice, I never had occasion to recur to a second operation, but in the above two cases. The first was unavoidable, from the nature of the injury ; but it is manifest, that in the last case, had the opening been properly made at first, the boy would have recovered, and we should not be instructed by his fate, in the lesson, that the points of a fracture constantly opposing the pulsation of the brain, will, in time, cut through the membranes, and wound the brain ; and more extraordinary whilst this tragic scene is going on behind the curtain, we have no particular symptom to ascertain the fact, till it is proclaimed by convulsions and death !

I have said already, that the Surgeon should pay great attention to the point of election for his operation ; and if he does, he will seldom be under the necessity of recurring to a second.

In most fractures, with considerable depression, the diseased bone is sloping, and the deepest impression, is nearer one edge of the sound bone than the other. This is the *precise spot for action*; and here you will surely succeed. In removing the integuments, a liberal use of the knife is generally recommended and practised, in order to bring all the injured parts to view. I had also adopted this practice; but the numbers of cases that fell to my share; and that reflection, which every humane person should adopt, insensibly led me into a better and a safer practice. New cases convinced me, from day to day, that much pain, danger, and delay, might be saved by a milder method, and without fatiguing my readers with a dull recital of cases and experiments; I shall at once proceed to the practice I have uniformly followed in all such cases, for those last 15 years past. It has proved of great advantages to my own patients; and I pledge myself, that whoever adopts it, will find no cause to complain.

Let us, for example, suppose, an extended fracture on the side of one of the parietal bones,

with a severe depression, without a wound of the integuments. The touch will to a certainty direct you to the point of the bone deepest immersed. The head being close shaved, place the crown you would wish to use over the found bone, to the edge of the depression. With a pen, at the distance of about a line from this crown, on every side, mark its periphery on the head. Then proceed with your knife, to make a circular sweep, at once to the bone; and remove the integuments, including the pericranium. Little ramifications, and sometimes considerable branches of arteries will play. However, without any regard to this, proceed to absorb by soft lint, the blood on the bone, whilst an assistant is directed with his fingers, to press the integuments at the edges of the wound, and exactly over these playing fountains. This will at once check the hemorrhage, and you may proceed directly to the operation, which the oozings from the wound will greatly facilitate. Introduce through the perforation your elevator, and raise the depressed parts. Place light dossils of  
 lint

lint over the dura-mater, and these round the edges of the wound, may be covered with flour ; lay the usual apparatus over these, and leave the patient to his repose, without further evacuations ; except, that if his bowels be a little tight, some gentle evacuation may be necessary. In such case, I generally direct small doses of nitre and jalap—for instance, about eight grains of the former to three of the latter, every three or four hours, with a couple of spoonfuls of the saline julep, with syr. de althea, till two or three stools are procured.

In this operation, I make no provision for the fractured parts, nor do I think it necessary to lay them bare. My objects are, to give the patient the most speedy and efficacious relief, with the least possible pain, and rejecting whatever would retard the cure. I will grant, and proofs will appear in the subsequent part of this work, that some parts of the fracture will not unite, and may become detached. No matter : the great work is now done ; Nature will point where these lie ; and a slight incision,  
often

often the forceps alone will remove these, when completely or nearly detached. It is sufficient, if there be room enough for the instruments to work : beyond this, is needless. The breadth of a line, from the periphery of the trephine, will answer this as effectually as two inches, and the cure will be considerably accelerated. Though I direct the circumference of the incision to be traced with a pen, yet I always depended on my eye. Twice I recollect, the incision was so confined, that the teeth of the trephine frequently rubbed against, and brushed the edges of the wound ; and yet, not the smallest bad consequence followed. On the contrary, these two cases were expeditiously cured. I have in the above instance, confined my directions to depressions, without wound, because, where there is one, the case becomes more simple.

I know it is not usual to make the incision and perforate the bone immediately after, on account of the bleeding. Necessity at first made me adopt this practice ; and experience satisfied

fied me, that it was a safe adoption. Frequently called to poor people in the country, where there was too often abundance of wants of all kinds, but particularly of money, I endeavoured to make myself as useful, and as little expensive as possible to all, especially to those that could pay a little. I was therefore under the necessity of doing every thing at once. However, though this is my general mode, I have no objection to gentlemens' splitting the operation into two acts; nor can any possible danger arise from the delay, except where symptoms of a depressed bone appear, and then no kind of interruption should be suffered.

## CHAPTER



## CHAPTER XV.

Symptoms produced by depressed Fractures unrelieved in a reasonable time, and which required the immediate use of the Trephine—illustrated by some very remarkable cases.—Univocal signs of a Fracture of the inner table of the Cranium—Instance of a man, who died with an extended fracture unrelieved, and the concomitant Symptoms.

**I**T has been already proved, that there is no immediate existing symptom, by which a fractured skull may be known, and that our information must be derived from the touch, the probe, and the nature of the injury; but it would be hard to suppose, that a regular uniform pressure on the membranes of the brain should long continue, without some particular symptoms.

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A fracture, with depression, is generally followed with marked symptoms ; in some, these appear sooner, in others, later, but in none, exactly the same. They are sometimes, a darting pain from the fore to the forehead and eyes ; an incipient heaviness, torpitude and weight in the head. The lightest noise disturbs them. They grow lethargic, often convulsed, and if not speedily relieved, the scene closes with death ! When called in to a patient, with any, or all of these symptoms, especially with an heaviness of the head, and lethargic tendency, some days after a violent injury to the head, you may conclude them, the signs of a depressed bone, and you are carefully to examine the hurt, and proceed to disengage the part.

As these symptoms form the exact criterion, between a simple fracture of the skull without, and a fracture with depression ; and that the former demands no operation, whereas, in the latter case, it can not be dispensed with, we shall try to elucidate the position by facts.

C A S E L.

JOHN O'MARA, steward to the Revd. R. Maunfell, Chancellor of the Diocese, about ten years ago, received a severe blow of an hurl, or bat, on the middle of the left parietal, accompanied with a small contused wound. It was dressed for some days, by some handy person in the neighbourhood; but the man growing heavy and drowsy, determined the Chancellor to send me to visit him. I saw him the tenth day from the injury. His pulse were tolerably regular: he was in his senses, but had a visible comatous tendency. I now inspected the fore carefully. On introducing the probe, I found the bone bare, and concluded from the symptoms, that there must be a depressed bone. The integuments were directly removed, and a considerable fracture appeared. I proceeded to the operation, raised up the injured part to its level, the symptoms died away, he got a good cure, and is at this day stout and hearty.

C A S E

## C A S E    L I.

WM. O'NEIL, sportsman to the late Colonel Quin, heading a party to take a forcible possession of lands, within four miles of this city, in August 1778, was attacked by the people in opposition and his party routed. He singly stood on his defence, and peremptorily refused to give up his arms, though frequently called on so to do. He retreated to a cabin, and swore he would kill the first man that followed him. He presented his piece; it missed fire, and he was soon overpowered. Repeated blows could not bring him to the ground. He for some time covered his head with the right fore arm, 'till it was fractured, as was also the left, in succeeding to this melancholy office.— He received a very extended wound on the upper part of the left parietal, which laid the bone bare for above two inches, and a violent contusion on the middle of that bone. The  
fractures

fractures were set, the wound of the head dressed, and every precaution taken, to prevent fever and inflammation. He went on tolerably well for about twelve days, except, that the wound on the parietal never shewed a good aspect. About this time, I sensibly perceived him to grow heavy and drowzy. I more narrowly inspected the head. Though the bare bone became discolored, and that I expected some exfoliations would follow, yet I was well convinced that no fracture existed there. I interrogated him more closely. He told me, the least noise disturbed him; and he imagined sound was conveyed, as well through the side of his head, as through his ears. Next morning, perceiving the drowsiness sensibly encrease, I carefully examined the contusion which hitherto had been little attended to, and only covered by a compress, wet in spirits. I thought I felt an obscure fluctuation. At all events, the growing symptoms determined me to lay open this part. But what was my surprize, when I found the bone not only fractured, but beat into small pieces at the point

point of percussión ! I trepanned on the spot, removed some loose bits, and raised others to their level. Every thing after this went on very well, except the denuded bone at top, which threw off a good many exfoliations, and remained open for many days, after the fractured parts were healed. I attended the prosecution of the assailants, the spring assizes following, at Ennis, where this man appeared, as prosecutor ; had married in the interim, and was as stout and hearty as man could be.

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## C A S E LII.

MAY 13, 1785, I visited Patrick Hayes, a farmer, near Bilboa, in the county of Limerick. The 30th of April, in a dispute, he received a severe blow of a large holster pistol from a man on horse-back, the lock of which made a profound depression on the posterior  
and

and superior part of the right parietal bone, and very near its junction with the occipital. It was attended with no wound, but a slight perforation, scarce sufficient to admit the end of a probe. He continued abroad on his usual business for some days,; but heaviness, torpitude, and weight of the head, confined him to his house, and then to his bed. A Mr. Ryan, a young man who attended our Hospital, saw him in this situation ; and an express was dispatched to me, but I had then, and for some time before, been beyond Cashel, in the county of Tipperary. He waited the following day my return, and then brought with him another gentleman. He declared, there was no fracture, and left the man to his fate ! The evening of the 12th, I returned to town, where I found a messenger waiting. I set off next morning, for the place was distant above 14 miles—I found the man with a slow, weak, but regular pulse. He was quite stupid, and lethargic, and could not utter a word. Upon passing my probe through the small opening, I found the bone rather crashed

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than broke, and was, for some seconds at a loss how to conduct myself, on account of the situation of the sick, and the nature of the injury. Should I proceed to the operation, and that he died, which seemed much more than probable, it might be insinuated, that his former visitor could be no more deceived as to the nature of his complaint than I ; but that sensible of the inutility of any operation, he declined it. But satisfied, that no other resource was left for life—and a wretched prospect it was—I was determined to do what I thought my duty ; better pleased to be censured by others, than to censure myself. I told the people, what was indeed but too visible to themselves—that the man had little or no chance for recovery ; but however, unpromising as the case was, I was willing to do my utmost to relieve him, provided no censure would follow its want of success. They conjured me to do whatever I thought proper, and expressed their satisfaction and confidence in me. Upon removing the scalp, the bone had been so far beat in, that I apprehended I

should



should find the membranes wounded to the brain broken into small bits. I saw to a certainty, that if I could raise one or two of them, I could remove the whole, the injury being confined to this circumscribed part—with my probe, forceps, and elevator, succeeding each other, I was fortunate enough to raise up and remove one piece ; this gave room for a second, and so by degrees, and with some patience, I cleared the dura-mater of all this incumbrance, without recurring to the trephine ! It was greatly depressed, wounded in two or three places by the points of the bone, but nowhere quite through. Add to this, that it was much discolored, and had a blackish hue ! He opened his eyes immediately after this, was much lighter, and prayed God to bless me. With Mr. Ryan, who was present, I left directions in writing how to treat him. I ordered a cold infusion of the bark, and valerian in powder, on water, to which was added two ounces of Huxham's tincture. He was to take for nourishment, seasoned broths, fagoe, or gruel, with some wine ; by no means to be

kept low, and the dura-mater was to be dressed with doffils lightly imbibed, with bals. traumat. By degrees, the dura-mater rose to its level, assumed a better colour, and he got an extraordinary and expeditious cure, owing to the small portion of flesh laid bare !

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### C A S E LIII.

VERY soon after, a child about three years and an half old, was brought to me from a remote part of the country. So long as twelve days before I saw him, he had his right parietal bone broke, and deeply depressed, by the kick of an horse. Heaviness, stupidity, and insensibility, with a large wound, determined the parents to seek my assistance. I made way for the trephine, just at the most depressed part of the bone, raised up the injured piece, and dressed lightly. The alarm-  
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ing symptoms died away, and in four weeks after, he was brought home completely recovered.

It is worthy notice, that in almost all fractures with depression, the injury to the bone, is more extended in the inner than the outer table ; and I have often met with cases, where, upon raising up the bone, small pieces of it have been fairly detached, and pressed on the dura-mater. As instances have been produced, where the inner table has been fractured, whilst at the same time, the outer appeared sound, it merits some attention. I own, I never met with an instance of it, but of its possibility, I have not the smallest doubt, for the above reasons. Let us suppose a man to receive a severe blow, or some other violent injury on the head. No loss of sense or memory immediately supervenes, he goes on to all appearances tolerably well for some days. He is then attacked with an heaviness, and pain in the head. He insensibly grows more oppressed, is inclined to dozing, and lethargic complaints.

plaints. These form strong suspicion, that there is a fracture concealed, with a pressure on the brain ; and will justify the necessity and utility of the trephine. But without THESE SYMPTOMS, I should oppose any operation, from an imaginary cause.

To throw every light I can, upon a subject so interesting, I shall close the chapter, with the case of a man, who died ten months after a complicated fractured skull, and which had not been relieved. Some of his symptoms continued those of a depressed bone, others were anomalous, and he died of a decline ; but I am persuaded, the real and remote cause, was the neglected fracture.

## C A S E    L I V .

JAMES GRIFFITH, a stout athletic man, about forty, in a riot on the 1st of October, 1787, had his skull fractured on the posterior and superior part of the right parietal bone, and joining the occiput. This had very little depression ; but he had another on the side of said bone, and some distance from the first, with a considerable depression. The aggressor sent me to visit this man, in order to know if the case was bailable, that he might return to his business. I sent him word, it was not. This happened the 16th of said month ; but as all parties were poor, and considering that the death of this man would necessarily cause that of others, I called on him next day, and prevailed on him to go into the Hospital. The injury on the posterior part of the bone, I hoped would require no operation ; but the

the other, I supposed undoubtedly would. I removed part of the covering from this last, and would have proceeded to the operation, but for the interference of a medical gentleman, a friend to the patient. Still the depressed bone remained bare, and I endeavoured by different other means, to loosen or remove it. But tho' my endeavours were unsuccessful. I at times perceived a very offensive fœtor from the fracture. I sent repeatedly for this gentleman, to persuade him to agree to the operation, but he was positive, that it would be unnecessary; so considering, that if after this, I should attempt it, and that it proved unsuccessful, his death might be charged to the operation, not to the injury, I left him after me in the Hospital; and in the end of six weeks, he was discharged. I was some time after applied to for a certificate of his health, but I refused it, declaring my sentiments, that his life was still in imminent danger, notwithstanding the distance of two months from the first injury! A certificate however was procured, and the parties entered bail. The depressed parts, it appeared,

peared, were never completely covered ; however, he went abroad, but continued in a low declining way, and incapable of following his trade. Of these last facts, I remained ignorant till the 3d of August following, when I was informed, that prayers were offered up at Chapel, for an happy death to him.

Curious to know the end of this melancholy business, I enquired where he resided, for he had removed from his former habitation. I visited him, not knowing but the operation might still afford relief ; but I found him in a most languid way, and just exhausted ! I examined the head, and the depression still remained, and the bone uncovered ! I enquired into his symptoms. He had from time to time, a darting pain from the very back of his head to the forehead, and to his eyes ; and this complaint continued at times, from the third day of the accident, but he had no heaviness, lethargic tendency, or convulsions. He died the next morning ;

morning ; and I was very anxious to open the skull, but it would not be permitted. His principal complaints, for the last six weeks, were a severe cough, night-sweats, and a decline.

## CHAPTER



## CHAPTER XVI.

The general Practice of profuse bleeding, and other evacuations in depressed fractures of the cranium examined and censured.—Cases to prove the utility of a different treatment.—A most remarkable instance of the management of the scalp, and its success—A case to shew, that the general principles here laid down, may be sometimes modified.

**A**LL Medical-writers, ancient as well as modern, who have treated of injuries of the head, have been unanimous and decided, that profuse and repeated bleedings, were absolutely necessary and indispensable. In wounds of the pericranium, Mr. Pott warmly and strenuously recommends bleeding, as the most rational means of preventing the formation of  
pus

pus on the dura-mater or brain. In concussions of the brain, he deems it the unicum remedium ; and in fractured skulls, it is always held out as a most powerful resource. Let us examine, by what authorities, founded on plain reason, and experimental observations, this practice is so strongly and so constantly inculcated,

To give it proper weight, it must pre-suppose an high tendency to irritability, and inflammation, in the cerebrum and its coverings. But is this supported by facts ? it undoubtedly is not ! Every observation proves, that they have very little tendency to either—at least, the most violent external injuries offered to them, establish the fact. In the case of Shea, (Obs. 17.) we have seen the two parietals, and the coronal bone beat almost to pieces ; in many places, the fractured parts beat through the membranes, and lodged deep in the substance of the brain ; these pieces extracted from time to time ; and the brain itself, discharged with great profusion.—This melancholy

melancholy scene lasted 17 days, and yet was attended with very little fever, and no inflammation whatever. More proofs of this will appear in the last Chapter. To a certainty then, neither the brain, or its envelopes, are subject to inflammation or irritability, at least, from external hurts; and here the general doctrine of the antiphlogistic method, receives a formidable attack. Again, in severe fractures with depression, unrelieved, till the effects of the cause appear, we find the pulse, though sometimes quick, yet, generally small and low, with scarce any tendency to inflammation.—Will this justify profuse bleedings? Will a discoloured dura-mater, almost always attending these cases, often black, justify profuse evacuations? Surely, no! But they will indicate a contrary course: namely, generous diet, wine, and the bark. As to instances of extravasation and commotion, I have already treated amply of them; and have endeavoured to demonstrate, that profuse evacuations will answer no better purpose in them, than in disorder of the present description. My decided

cided opinion, with respect to the treatment of severe fractures, I thought proper to introduce here. It is highly worth mature discussion ; and until I receive proofs as strong for the former practice, as these here adduced for the present, I shall not be prevailed on to give up my opinion.

By compound fractures, relieved in the first instance, I understand cases, where the Surgeon is called in on the spot, in two or three days, or before the symptoms of depression come in.

C A S E

## C A S E LV.

THE Son of one Ryan, a farmer, near Broadford, aged about fourteen, had the left parietal bone miserably fractured, by a kick or kicks of an horse, in June, 1776. He was next morning visited by an apothecary in the neighbourhood, and I saw him the morning after. He was cool and collected, had a contused wound, and the bone broke in two places. The bone was profoundly depressed in its superior part, and beat in here under the sound part. I directly made room for the instrument, which I applied to the edge of the fracture; soon removed the bone in its vortex, and gave room to the elevator: near two ounces of blood followed the elevation of the bone, but it had been so much sunk in, that the most elevated part of the fracture gave way transversely, and I conjectured the piece would come away. It did so, in the course of some days. I found  
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the part beyond this depression free, and as the boy was young, I ordered some blood from him on the following morning, if hot or restless in the night. I never visited this formidable fracture but three times; the boy got speedily well, and has enjoyed remarkable good health since.

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## C A S E LVI.

NOVEMBER 4, 1782, I was requested by Mr. Alderman Widenham, to visit Patrick M'Carthy, a farmer, at Corromore, within five miles of this City. The evening before, returning from market, in some dispute, near the town, he received a most violent blow on the right side of the coronal, which produced an extended fracture with great depression.—He was taken into an house, about two miles from town, and here I saw him. The wound  
was

was but slight, the pulse slow and regular, and though sensible, yet he seemed inclined to stupor, on account of the remarkable depression, and the extent of the fracture. I, on the spot, intended trepanning, but neither himself or his friends, would suffer any thing to be done, till he reached home. In vain I pointed out the necessity of some speedy relief, and the danger to be apprehended from the delay. I returned to town, concluding the next account I should hear, would be that of his death. Early next morning, Alderman Widenham called on me, and we proceeded to the man's house. I found him still more heavy and depressed than the preceding day ; and on removing as much of the scalp, as gave liberty to the instrument to work, I proceeded directly to the operation. On raising up the part depressed, the weight and heaviness soon quitted his head. The bone had been broke in five pieces, most of which I conjectured would come away. It had extended to the edge of the parietal, and down the temple at that side ; for, beside the blows, I was inform-

ed, that the horse took fright, he fell off, and his feet sticking in the stirrup, he was dragged some distance, with the head dashing against the ground. The fracture on the temple, was the furthest removed from the perforation.—The bone was broke into two distinct pieces ; the largest above an inch square, but the flesh over them, perfectly sound and uninjured. As I found, that they in no manner pressed on the brain, though easily removable, I resolved to let them remain there for some time, to see how far Nature would exert herself, to bring about a re-union. I visited this man every day, for a fortnight after, so can speak with more certainty, as to the case. Some pieces near the perforation, came away from time to time, without much pain or trouble, and the two inferior pieces shewed no tendency to coalesce. On the contrary, an encreasing foetor shewed them to be clearly extraneous ; and this becoming more offensive, determined me, at all events, to remove them. To cut away the integuments over them, would leave a very large quantity of the dura-mater bare, and add to the



the danger of life : at best, it would considerably retard the cure. Should I attempt to extract them, without removing the flesh, sinuses might probably form, and I then should be obliged to do at last, what ought to have been done at first. It was, however, the mildest mode, and I determined to adopt it. I passed a round sharp-pointed scalpel, between the bones and the pericranium, which I easily separated from each other, without the smallest interference with the scalp, and with a forceps extracted the two pieces. The cavity, I filled up lightly with soft lint, secured by threads.— At every succeeding dressing, I lessened the quantity ; and the sixth day, from the removal of the bones, I put no dressing whatever, between the dura-mater and scalp, but placed some soft lint outside, covered with adhesive plaister to keep it steady, and a light bandage. In three days, there was a perfect union of the parts ; and this man, though almost the entire coronal of the right side was fractured, and a good deal of it removed, yet got as complete and as speedy a cure, as ever I remember !

This case, and the mode of bringing about the union of the parts, by a bold attempt, and I think unexampled in the History of Surgery, merits the serious attention of every good and humane practitioner.

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## C A S E    LVII.

WILLIAM CONNELL, Cooper, aged about 27, a stout, strong man, being in company with others, on the night of the 19th of March, 1788, at a public-house, a quarrel arose between two of them, and Connell seeing one of them infinitely stronger than the other, rushed between, disengaged the man, and pinioned the other against the wall, till his antagonist would make his escape. Instead of this, he seized on a large kitchen tongs, and levelled a terrible blow at his adversary ; but falling short of him, Connell received its whole force

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on the middle of the left parietal bone. It bled freely, and was dressed with lint and brandy, covered by some plaister. On the 23d, I was called in. I found a wound of about two inches long, with pale uninflamed lips, and a considerable fracture, with great depression. He was composed, and very collected, his pulse slow, but a very marked intermission, at every 20 or 25 strokes. The operation, however, was the only chance he had for life ; and on the spot, I removed as much of the scalp to the edge of the depression, as would admit the crown of the trephine. It bled very little, and there seemed to be a kind of a *vis inertiae* in the parts, that boded no good. I told the people, at all events, that I would trepan him next morning, if in any tolerable condition. I did so, raised the depressed parts, and found the fracture more complicated and extended, than I at first thought. I directed for him the saline julep, with tincture of bark, and a small quantity of thebaic tincture. Still the intermission in the pulse continued, with great lowness and dejection

tion of spirits. I directed gruel, with wine, for his diet. The 25th, he was more composed, the laudanum acting the part I proposed, not as an opiate, but a sedative. On opening the fore, I removed two bits of bone (one pretty considerable) that lay under the depressed parts, totally detached. I covered the dressings with a compress, wet in spirits, and directed at times, draughts of light wine-whey, with a continuance of his julep, as the lowness and intermission still continued. The 26th, the dura-mater was a good deal discolored, and the next morning quite black.— Though all these symptoms were the most unpromising, yet I had in an hundred instances, seen the dura-mater discolored, and afterwards resume its natural colour, without any alarming appearance; but then, indeed, in all these cases, there was no marked intermission in the pulse, as in the present. The patient had a very good character. By his trade and œconomy he supported his mother and two sisters, and I felt myself the more interested in his recovery. I now directed the bark to be given in substance,

stance, laid doffils, squeezed out of the bals. traumat. to the membranes, and ordered a more enlarged diet. When I mentioned strong and seasoned broths, the people seemed frightened; but more so, when I told them, that if once, or twice in the day, he found himself low, and preferred half a pint of porter to wine-whey, he might safely take it. He however, preferred the wine whey, as, I suppose, having a more medical appearance. In some days after, a very large portion of the bone came away. I used not the smallest violence to extract it. I saw Nature was doing her own business; and when removed, not the smallest drop of blood followed. Though the pulse were much mended, yet he complained at times of head-ach, and pain between the eyes. The dura-mater, and bone began to cover, with a loose fungous flesh. I sprinkled lightly the parts with levigated precipitate, and dressed with dry lint only. A small piece of bone now came away. From the 12th of April, I visited him but twice a week; and in the course of six weeks from the injury, he got a complete cure.

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Though this man's symptoms from the beginning, carried a most formidable appearance ; yet, I think it must be acknowledged, that the freedom I recommended, in point of diet, must have had a remarkable good effect. What the contrast between this, and the French mode of treatment ! But I would ask any man of professional abilities, united with native good sense, if warm antiseptic medicines, are necessary in certain disorders ; whether a corresponding nutritive diet, is not compatible ? If not, there must be a great error in the whole proceeding ! But I am persuaded, that if the culinary business of the sick, kept pace with a judicious selection of medicines, much greater benefits would arise to the public.

C A S E

## C A S E LVIII.

— RYAN, body-servant to Mr. Devonshire, of the county of Cork, fell into idle company, the night of the 11th of July, at the races of Loughmore, near this City, and was very severely treated. He was brought early next morning to a gentleman's house, about two miles from town, and I was soon after sent for. He had received several wounds, one in particular, on the posterior part of the parietal bone, and just connected with the occipital, on which also, there was a wound, and an undepressed fracture. The fractured part of the parietal was greatly depressed, and extended a considerable way, and the most depressed part was, in a manner, wedged in under the sound bone, and just verging on the future. Seeing the situation of the fracture, and dreading the consequences of the operation, situated and circumstanced as it was, I  
told

told his master, the necessity there was, for calling in more assistance. That the man should be sent to town, for the greater convenience, and I pitched on Mr. M'Knight, whose professional abilities I had been so long acquainted with, to assist me on the occasion.— He was sent accordingly ; and the next morning I removed the integuments, and set to work, adjoining the part so strongly pressed in. But though I got the elevator under this depressed part, and removed some detached bits of bone, yet I could not raise them to near their level. However, the dura-mater was greatly freed, and as a good deal of blood flowed from the aperture, we concluded, that in two or three days, they would be easier disengaged, when a kind of suppuration was established, otherwise, to proceed to a new operation. It turned out, as we predicted ; and the third day, the entire piece came away. The dura-mater appeared much discolored, and verging to blackness. He took an infusion of the bark, but his pulse being fuller and quicker, than I have generally observed, he

was



was bled in two hours after, and again next morning; and after each bleeding, it appeared considerably buffed and inflamed—probably occasioned by cold, as he had remained two or three hours exposed to the open air, after the injury. Things went on very well for some days after; but he was then seized with a severe head-ach, pain in his back, and retention of urine. Bleeding was again recurred to, and it appeared still buffed and inflamed! Stupes were applied to his belly; and he took the saline mixture, with tincture of fenna, *sp. nitri dulc.* *fyr. de althea*, and forty drops of the *tinct. thebaic.* two table-spoonfuls every two hours, till relief was procured. In three days after, the retention of urine returned, and was effectually removed. However, the head-ach continued; and a large blister was applied between the shoulders. He got soon after well, and returned to Cork. Since then he called two or three times to my house, expressing with great feelingness his obligations.

The many and anomalous symptoms attending this case, and so different from what I had before met with, *merit great attention*. I have laid down as clear as I was able, the general mode, I would recommend in fractures. I have condemned the free use of bleeding, low diet, and other evacuations ; but every practitioner, endowed with clear, plain intellects, will quickly perceive, that there will be ever particular exceptions to general rules. If I censured evacuations in the preceding cases, it was, because their necessity was not apparent. If I was free, and a little severe in their use, in the present instance, it was, because their necessity might be seen with half an eye. The present, and the most alarming symptoms, should ever occupy our first thoughts. The state of inflammation in his blood, might have carried off this man in a short time, if not soon remedied, notwithstanding the apprehensions from the consequence of the

the fracture were removed. The succeeding retention of urine, might prove equally fatal, if not particularly attended to ; and the remaining head-ach would be very troublesome, but for the application of the blister.

## CHAPTER

## CHAPTER XVII.

Remarkable Cases of Compound Fractures; with most alarming Symptoms, relieved by a single perforation—A fracture of the coronal, with an incisive wound of the membranes and brain—An extended fracture of the parietal—Another of the same attended with most unpromising symptoms—A perforation over the longitudinal sinus—Two distinct fractures on the coronal bone—An extended fracture on the parietal, attended with an unprecedented hæmmorrhagy—Another fractured aprietal.

THE Symptoms of a depressed bone, being effectually established; the business of this Chapter is, to recite the successful treatment of compound fractures unrelieved in the first instance, and to encourage Surgeons, not to be backward in their assistance, in cases of this class, however desperate and unpromising.

C A S E

## C A S E LIX.

————— DEMPSEY, a journeyman whip-maker, in May, 1772, in a riot, with some foldiers, received some severe wounds on the head with a sabre ; one in particular, on the coronal bone, of about three inches long, which divided the bone, passed through the membranes, and wounded the substance of the brain—He had besides a very extended fracture, with depression, on the side of the left parietal. For some days, he went on quiet and easy, with these formidable injuries, being clear and collected, with scarce any fever ; but the consequences of depression began to appear. On the night of the 9th day, he grew chill and heavy. Next morning the symptoms increased, with weight and pain in the head. A lethargic tendency came on at night ; and I was next day, requested in charity to visit this man, when I obtained the above information.

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I directly scalped, to make room for the instrument, which was the largest crown I had. The depressed parts were raised. The symptoms soon died away ; very many pieces of the bone, came away from time to time ; the incisive wound of the skull and membranes healed kindly, and he got a speedy and lasting cure. This man, I am told, has carried on for many years past, business for himself in Dublin.

C A S E

## C A S E LX.

PATRICK CUREEN, a Publican of Tulla, in the county of Clare, in the beginning of May, 1775, received violent and repeated blows of a loaden whip on the left parietal bone, which produced a very extended fracture. It was not accompanied with a wound ; so, as he was composed and collected, little was made of it. However, in the course of some days, symptoms of a depressed bone began to appear. He grew dull, complained of weight in that side of the head, with pain and head-ach ; he dozed a deal, and at times seemed stupid, slight spasms followed ; and on the 13th day I was called in. Tho' a slight fluctuation was sensible to the touch, yet the depression of the bone could be seen with a single glance of the eye, and a very considerable and extended one it was ! I instantly removed as much of the integuments, as made room for the instrument. The

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bleeding was uncommonly smart, but by the steady pressure of the fingers of an assistant, it was so far mastered, that I was able to proceed to the operation, and raised up the depressed parts. Some loose detached pieces of the bone I removed, and on the spot, he was sensibly relieved. The fracture extended very far, comprehending in it several pieces ; however, as the pressure was removed, I was satisfied that the object of the operation was effectually answered ; and that such pieces as were not disposed to reunite, would be easily removed. I left directions with an handy man in the town to dress him. I never saw him after, till the following assizes of Ennis, where business called me. This man appeared to prosecute, with ample testimonies of the outrage—namely, a thin and extended cicatrice on the head ; and a large parcel of pieces of bone papered in his pocket. My appearance was of some use to him, as the aggressors imagined I was to be called on in Court, so they expeditiously compounded the affair with him.



## C A S E      LXI.

IN May, 1779, Patrick Kelly, a cabinet-maker, residing near Tulla, in a dispute, received repeated blows of the rail of a car on the left parietal, which produced a very extended fracture, with a slight wound of the integuments. He was for some days attended by a young man in the neighbourhood, who had been Surgeon's mate to a marching regiment. In the course of about ten days, the usual symptoms of a depressed bone appeared ; and when I saw him, which was the 14th day from the injury, he was comatous, greatly oppressed, and so languid, that I apprehended every attempt to relieve him would be useless. My first ideas were to return to town directly, without doing any thing. However, reflecting on the great resources of nature, that I had received the people's money, and that it was my indispensable duty, after making an honest prognostic, to leave nothing un-

done, to afford a chance for life, I fixed my resolution. I told his friends what I really thought ; but as I was on the spot, I was ready and willing to do what lay in my power for him ; that there seemed to be a moral certainty, that every effort would prove useless, and that I would subject myself to all these hazards, provided they threw no censures on me, on the event of want of success. They seemed struck with my declaration ; applauded my feelings, and begged I would go about the business. I did so, raised the depressed parts, and was satisfied from the nature of the injury, the extensiveness of the fracture, and the many pieces in which the bone was broke, that if he recovered, it would be by a loss of a great part of the parietal. Immediately after the operation, the man opened his eyes, knew me, and said he had great confidence in a recovery, since I had come to his relief. I left directions, as to his diet ; to be by no means kept low, to take sago or gruel, with wine, and seasoned broth. I ordered an infusion of the bark, with valerian ; and as the

dura-

dura-mater was brownish, to imbibe the dofsils lightly, in the balf. traumat. Still I had little or no hopes of him. In eight days after, I was again called to him. He was much mended in his constitution, the dura-mater was better coloured, but I found a confiderable piece of the bone loofe, which I eafily removed with my forceps. Next day he perceived a weaknefs in the neck, and in the arm of the oppofite fide ; and by night, it attacked that entire extremity. In a few days after, two more pieces were removed, and again a third. He laboured under this partial paralyfis for fifteen days, and after this gradually recovered. He called upon me the latter end of July, previous to the affizes of Ennis, to carry with him a certificate of the facts, with the many bones he loft, to produce in court. The cicatrice was every where firm ; and his recovery was as extraordinary, as it was unexpected !

## C A S E, LXII.

JOHN CANNY, aged about twenty, residing at Fiacal, in the county of Clare, received the 23d of January, 1784, a violent blow on the side of the head. The skin was not broke, so it was not attended to ; but, however, in some days, he grew dull and heavy, quitted his work, and took to his bed. In fine, he became stupid and lethargic. His landlord, Mr. M'Namara, of Ail, hearing his situation, sent off an express to me. I saw him on the sixth of February. I found partly on the coronal, and partly on the parietal of the left side, a tumor, a little elevated, containing some fluid. I opened it, through its extent, and found, on clearing the parts, bare bones fractured, the future for union of both, being the center of the fracture and depression. I applied the largest crown I had on the future, at the edge of the fracture. I found no more difficulty

difficulty or obstruction to the operation here, than I would on any other part of the head, nor any adhesion of the bone to the sinus. I had a pretty considerable collection of blood under the fracture, which I carefully absorbed, and removed some detached bits of bone, and raised others to their level. By this bold, and indeed, safe operation, I saved this man from others, which must have been performed on both sides the futures. I heard no more of him, till the beginning of the following April, when he brought me a letter from Mr. M'Namara, requesting an attested certificate of his case, to lay before the Judges, at the Ennis Assizes.

C A S E

## C A S E LXIII.

NOVEMBER 1, 1784, Mr. O'Brien, of Cratloe, requested I would visit Dennis Molloney, aged about twenty, who the 20th of the preceding month, had received a wound on the left side of the coronal bone, about two inches above the orbit. It bled freely at the time, and our people paying little attention to considerable injuries, he was abroad next day, with his head bound up, and continued to work for some days, but he had not his usual vigour and spirits. His heaviness encreased, as well as weight in his head. The 28th, he quitted his work; and the next day took to his bed. I found him very heavy, with a strong tendency to doze, but yet sensible. The pulse, as is generally the case, nearly regular and even. The bone was laid bare, and greatly depressed. There was also, to all appearance, a slight contusion a little higher up, which was

scarce

scarce noticed. I directly removed the integuments to the edge of the depression, but not having my trepanning instruments, I desired he might be sent to town that night, or next morning, the distance being about four miles. However he did not make his appearance 'till the third day, and then I trepanned him, Drs. Unthank and Shearer being present, and raised the depressed parts. The duramater was discoloured, but things, as usual, were coming about. In some days, I noticed the pericranium not to be adhering to the bone, at some distance above the fracture, my probe having a free passage between. I opened the parts, and found where the seemingly slight contusion was, a regular fracture, with a slight depression, yet as he had no new symptoms, and the opening already made, being a kind of drain to it, I put off any other operation from day to day, knowing how great the resources of nature are, and that I had always the power to recur to it, when unavoidable. He took a cold infusion of the bark, with sweet elixir of vitriol. Fungusses arose from day to day

day over this part, and were repressed by the lunar caustic; signs of coalescence in some time appeared, and he went home, completely recovered in six weeks, without any further operation.

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#### C A S E    LXIV.

WILLIAM LAHY, a tall thin man, aged about forty, received a violent blow of the handle of a large kitchen tongs, on the upper and middle part of the right parietal bone.—The consequence was an extended fracture, with considerable depression, and a slight wound. This happened near Nenagh, and about twenty miles from this city, on the 2d. of June, 1788. He remained in the country till the 14th, when he came to town, recommended to me. He presented himself with more *sang-froid* and stoicity, than can be well conceived.



conceived. He had rode to town that morning, was quite clear and collected, and seemed not to have the smallest symptom of a depressed bone. The fracture sloped from above downwards, and the lower extremity was beat under the sound bone. It also stretched from both sides of this depression. They took a lodging near me, and considering the man heated by his ride, I judged it prudent, to attempt no operation 'till next morning. Accordingly in the presence of a couple of gentlemen, I removed the flesh, to make way for the instrument. A smart hæmorrhagy took place, which was not easily mastered. The operation succeeded, and on removing the bone engaged in the trephine, an artery played from the side of the opening like a fountain! This was a phænomenon I had never met before, but being always cool and collected, and more so, on any sudden or alarming danger, I directly mentioned to the gentlemen, a couple of instances I had met in dissection, where a considerable branch of an artery, which mostly forms a groove for itself in the internal part of the

the

the parietal bone, had, instead of this, passed between the two tables of that bone ; and, of course, in a similar case, in trepanning, this artery must be divided. It was precisely here the case ; so without the least confusion or embarrassment, I applied soft lint over this *jet du sang*, which by gentle pressure was soon restrained, and with the elevator, raised the parts depressed. In the afternoon, he was seized suddenly with violent tremors, succeeded by burning heat ; and when I saw him, which was soon after, his pulse were rapid and irregular. I however saw the forces strong, and judging that it would terminate in a diaphoresis, I directed draughts of light wine whey, with the saline mixture, in which were a few drops of laudanum. A profuse sweat accordingly supervened, and he was lighter and better in the morning. However, a strong smell from the fore, made me open it directly. There was a pretty considerable discharge of grumous blood, mixed with pus ; and the dura-mater and the wound looked badly, particularly the former, which

was

was quite black. Dossils pressed out of bals. traumat. were applied to the membrane, and the usual topics to the rest of the fore. I had often before seen the dura-mater much discoloured, after a depressed fracture remaining long unrelieved, and gradually re-assume its native appearance, without any alarming symptoms ; nor should I have been much alarmed at the present aspect, but for the tremors preceding it, which I feared might terminate in abscess. He took a cold infusion of the bark, and was by no means kept low in point of diet ; being allowed sago and gruel, with wine, broth seasoned, and at times wine-whey. From day to day, for seventeen days—for so long he remained under my care—scales and splints of bone were removed ; the dura-mater assumed its natural appearance, the fore gradually contracted, and the surface of it scarce exceeded the size of a shilling !

The facility, with which the depressed parts were raised, and indeed, in part removed ; the  
small

small quantity of scalp that was destroyed, and the expedition of the cure, sufficiently point the advantages of making your perforation on the edge of the most depressed part of the bone, and of being provident in your disposal of the integuments.

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## C A S E    LXV.

I was requested by Dr. Keating to visit a lad, beyond Newport, in the county of Tipperary, whose skull it was suspected had been fractured; but previous business then prevented me, so Mr. Fitzgerald, a young Surgeon of this city, visited him. In eight days, he called upon me, for my advice, and assistance in this case—I found a considerable fracture, with a very extended depression on the middle of the left parietal. A perforation of the bone had been very properly made, but it  
failed

failed of its effect. In short, the boy laboured under all the symptoms of a depressed bone, and these encreasing. Speedy relief was much wanting. I found the scalp formed no adhesion with the bone, the whole extent of the depression; and that it was necessary to remove a good deal of this, to come at the source of the complaint, for the elevator had no effect whatever. It appeared, that the extremity of the depression was wedged under the inferior parts of the parietal, and the case was rendered still more complex, by a fresh fracture at the edge of this last; which covered the other. There was a considerable fissure here. I passed through it the handle of a spatula, and this, in a little time, gave room to the elevator. This piece was entirely removed. There was nothing now to impede the elevation of the other bone. It was accordingly raised, and a large triangular piece removed. Much blood lay underneath, and when the dura-mater was cleared, I found on it two splints, and a piece of the bone, an inch long, and four lines broad, totally separated from

from the fracture, and pressing hard on the membranes ! the dura-mater was discoloured ; but on the instant, he grew sensibly lighter and better. I saw him no more ; but Mr. Fitzgerald, who paid him some more visits, gave me an account of the progress of the cure ; but he was a long time before the bone was completely covered, on account of the great loss of substance.

## CHAPTER

## C H A P T E R XVIII.

Successful efforts of Nature, in neglected fractures—A fracture of the parietal, where the injured parts were melted down.—A fracture of the coronal bone, relieved, ten weeks after the accident.—A fracture of the coronal, illustrating the first case.—A fracture of both parietals, at their junction, with a most remarkable depression.—A fracture of the coronal relieved, seven months after the accident.

**T**H E Success attending the above recited cases, shews to demonstration, how much may be hoped and expected from Nature in the most deplorable situation, if happily and properly assisted by art, in any reasonable time ! We shall now shew, what she is sometimes enabled to do, with little or no assistance from Art.

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C A S E

## C A S E LXVI.

JOHN HALLORAN, aged about nineteen, was admitted into the Hospital May 10, 1765. He had an abscess, about the size of a small apple, on the superior part of the right parietal bone, which I opened next morning. A large quantity of well-conditioned pus discharged, but it having been of a long standing, and the scalp over it ill-coloured, and quite hollow, I removed the diseased parts, which was done with little pain, the flesh being soft, flabby, and in a manner insensible. But what was my surprize upon clearing the parts, when I found a circular opening in the bone, of the size of half-a-crown ! the dura-mater was covered with matter, and very foul. After absorbing this pus, I found an ill-conditioned fungus rise, which almost filled the cavity made by the bone. This, on the spot, I sprinkled freely with pulvis angelicus.—It is composed



posed of equal parts of rock allum and precipitate, rubbed into fine powder. I continued the same application with lint and plaister, from day to day, 'till this fungus was reduced; and the wound healed as kindly, as if he had been really trepanned ! The account he gave me of the cause of this uncommon phenomenon, was as follows: About 12 months before, his master gave him a violent blow of a cudgel, precisely on the spot described; and he fell senseless on the ground, but soon recovered, after puking a little. No wound, or sign of contusion followed, but a slight swelling remained. About ten days after he complained of a heaviness and pain in the head, darting to his eyes. He at times grew drowzy and stupid. He quitted his service and went home. He after this was bled twice in the arm, and once in the foot, but at different periods. He was blistered between the shoulders, and took some opening physic. At length the tumor arose, already described, and even this afforded him little ease, till opened, and the fungous excrescence destroyed. In

about nine months after, I attended a young woman in Killaloe, for a fimilar complaint, and proceeding from a fimilar caufe !

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## C A S E    LXVII.

PETER BULKELEY, about twenty-three years old, was thrown from his horfe. His forehead ftruck againft a projecting ftone, which caufed a confiderable contufion, but without any wound. It was covered with a comprefs, wet in fpirits, and the man continued his ufual employ, which was that of horfe-rider. In the courfe of ten or twelve days, he grew heavy, his ftomach fickened, and he tried to relieve himfelf by a puke. He ftill laboured in his occupation, but without health or fpirits. He was twice bled, and a large blister applied to his back, but with little relief or fatisfaction. In the courfe of about

five

five weeks from the injury, a swelling and redness appeared on the original hurt. Poul-tices were applied, and matter formed, which burst forth from a small opening. The weight and pain in the head still continued ; and he came recommended to the Hospital, Feb. 10. 1777, being the distance of ten weeks from the fall. On introducing the probe into the orifice, I found a considerable hollownes, which I laid open. A natural trepan had been formed, the piece was detached, and I on the spot removed it ! Part of the found bone was without the pericranium, and remained a long time open, 'till three exfoliations took place.— Things then began to assume a good appearance, and he was discharged completely cured.

## C A S E LXVIII.

ANASTATIA BRANDON, living in my neighbourhood, in November, 1781, received a blow on the right side of the coronal bone, with a slight wound. In some days, a dizziness, with weight and pain in the head, came on, and gradually encreased. She applied to my apprentice, Mr. Fitzmaurice, who mentioned the matter to me, and told me the bone was bare. I went to visit the woman, enlarged the opening, and found the bone, of about the circumference of half-a-crown, discoloured and brownish, but to me it did not appear as if fractured. The diseased bone was, from day to day, sprinkled with pulv. angelic. the head-ach gradually lessened, but the discoloration of the bone encreased. In the course of ten days, it became quite melted down, and like fine mortar. The circumjacent parts cleared up ; some fungus from the dura-mater

was

was depressed by escharotics ; she soon got perfectly well, and at this day, enjoys remarkably good health ! The speedy dissolution of the injured part in this case, will very well account for no traces of the bone being found in the head of Halloran,

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## C A S E    LXIX.

JAMES CORMORCAN, a joiner, whom I remember since I was a small boy, was about twenty-three years ago employed in repairing the house of — Barnstic, near Ennis. A large oak beam suddenly gave way, and fell on his head, by which the two parietal bones at top, forming by their union, the sagittal-suture were fractured, and most profoundly beat in, with a considerable wound. He had no regular attendance, nor can I find, that he was ever visited by any person of information,

tion, but that the wound healed in some time, without the loss of any part of the bones whatever ; and that he remained for two years confined to his bed, quite paralytic at both sides, quite destitute of the powers of motion, and even articulating with great difficulty ! He after this period, by slow and gradual time, recovered the use of the left side, thigh, leg, and arm, but the right extremity is still paralytic, he still speaks with hesitation and difficulty ; and to me it seems, as if reason was not perfectly restored. I have examined this poor man's head repeatedly ; the depression is still most sensibly felt and seen ; and from what remains, the enormous weight of the beam, and height it fell from, we must suppose the resources of Nature in this case, beyond all reasonable credibility.

## C A S E LXX.

PATRICK LYNCH, in June, 1779, received a severe blow of an hurl on the superior and middle part of the coronal bone. On the instant he was stunned, and for half an hour after, deprived of his senses ; but on puking two or three times, recovered. No wound followed, and little notice was taken of it. In some time, he complained of pain, heaviness, and head-ach ; and except once or twice bled ; and as often puked, at different distances, he took no other remedies. He weathered it out as well as he could, to the Christmas following, when he went to some friends in the county of Tipperary, who soon found out an empyric, that promised wonders. Where the blow had been received, a tumor had been for some time forming ; and judging from its appearance, and the almost unremitting pain in the head, that it must be

cancerous,

cancerous, he boldly covered it with one of those corrosive plaisters, so well known, and by some imposed on, as a great secret. There it remained for three weeks, and so active an application, could not be left on so long for nothing ! With the plaister came off the integuments, and discovered a bare bone, with some fissures, and matter bursting through them from the dura-mater ! the matter encreased, pieces of bone became detached, and after the loss of several of them, he got well, assisted by the poor people about him. This man, I have seen, and examined several times since,

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C A S E LXXI,

DENIS HIR, of Palace, in this county, (Limerick,) aged fifty-nine, in some dispute on the 20th of April last, 1792, received a violent blow on the head, and this was succeeded  
by



by that of a stone of enormous bulk, on the superior and external part of the right parietal bone, which caused a profound and extended fracture. On the instant, he was seized with strong convulsions, which continued above two hours. On his recovery from them, he remained in a state of insensibility for two days, with strong inclinations to puke. A person was then sent for, who, after examining, pronounced him in no danger. His intellects became gradually restored, but he laboured under intense pain in his head, and when ever he took any food, that required mastication, he constantly found a grating and crackling of the bone, in the place of percussion. He continued, with this severe pain in his head, and a bare discoloured bone to the 27th of May, when he presented himself at the Hospital, and was immediately admitted. On examining with a probe, I found the bone bare for a considerable length, and that a separation had been forming just at the edge of the sagittal future. The morning of the 28th, I divided the scalp, to the spot where I felt the separation, and  
there

there introduced the elevator, and with little trouble removed a piece of the bone, much larger than a crown-piece, and nearly circular. On the inner table, the fracture extended every way, above half an inch more than on the outward; and this is almost generally the case in fractures of the head. In half an hour all painful sensations vanished, and the fore was dressed with dry lint and plaister. With respect to the piece removed, I have to remark, that about its center, it was black, and a little depressed, but not fractured. The inner table under this, was in a manner melted down, but firm at its edges. This man is recovering very fast; but I must discriminate between the symptoms. The convulsions and insensibility, are by no means to be charged to the fracture: they were the effects of a distinct complaint, a concussion, accompanying this fracture; and this is a circumstance that should always be attended to, in injuries of the head.

## C H A P T E R

## C H A P T E R   XIX.

Fatal consequences of delaying relief in fractures with depression.—A fracture of the coronal bone, unsuccessfully treated.—A second, attended with convulsions, and equally so.—Case of a fractured parietal, ending fatally.—A fractured parietal, attended with convulsions and paralysis.—An extended fracture of the coronal bone.

**T**HE Accounts given in the preceding Chapters, of many uncommon and unexpected recoveries, by the happy and timely interposition of Art, in aid to Nature ; and the last chapter in particular, shewing in a very astonishing manner indeed, what noble efforts and struggles she makes, even unassisted by Art, are capable of exciting many useful and moral reflections, to a good, and a contemplative disposition !

sition! But lest they should give too much confidence to young Surgeons; and that much precious time might be trifled with, I here subjoin a few cases, where Art in vain exerted her powers. It is by the shaded part of our practice, that instruction is often best conveyed; and I desire it may be recollected; that whilst I suggested every incentive, to exert our abilities to relieve Nature, however unpromising the appearance, yet I have constantly recommended, in every depressed fracture, when called upon in any reasonable time, never to lose a moment, nor wait for the dangerous symptoms of a depressed bone's appearing.—The following instances, are melancholy proofs of this truth.

C A S E

## C A S E LXXII.

ANDREW MOLONEY, a farmer, near Bick-Hill, in the county of Clare, and five miles distant from town, received a terrible stroke of a large stone, hurled at his head, the 30th of May, 1779, and which made its impression on the upper and right side of the coronal bone. How he was treated from the beginning, I cannot say, but suppose he had been, at least, bled and physicked. June the 17th, I was called upon to visit the man. I found him labouring under a low quick pulse, seemingly stupid, and speaking with great labour and difficulty. About ten days from the injury, he grew heavy, and complained of great pain and weight in his head, and this gradually encreased, 'till it came to the pitch described. There was no wound, but a small opening, barely sufficient to admit the point of a probe, and this shews the very little attention

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tion paid to it. On passing in the probe, I soon perceived the bone bare, with a considerable fracture and depression. I directly made room for the instrument, trepanned, raised, and partly removed a considerable portion of the beaten-in-bone. On the spot, he seemed much relieved. The dura-mater was ill-coloured ; so I dressed with lint, squeezed out of spirits. I directed a cold infusion of the bark, to be taken every four hours ; and to guard against convulsive attacks, which I apprehended, I ordered also the saline mixture, with tinctures of castor and valerian, and a small quantity of laudanum. I saw him two days after ; and he then seemed much better ; but in the evening of the next day, he was seized with spasms, and slight convulsions, and died next morning.

C A S E

## C A S E LXXIII.

JOHN QUANE, living about four miles from town, on the road to Newport, received a fracture, with considerable depression of the coronal bone, by the projection of a large stone. This happened the 30th of June, 1783. The 14th of July, I was called upon by the Revd. Mr. Franklin to visit this man. Besides the heaviness and head-ach, generally subsequent to depressed bones, he had been at times attacked, for three days before I saw him, with convulsions ; had been at times delirious, and when I saw him, had a rapid, but a low pulse, for he had been, it seems, largely evacuated. The state of the bone could not admit of the smallest doubt, but his other symptoms demanded very serious reflections. In the course of half an hour after my arrival, he had two convulsive attacks, but in the intervals, seemed much collected. I concluded he

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would

would certainly die ; but the fracture and depression were so considerable, that I thought it would be criminal in me, not to propose this only chance for life. Dr. Irewin, who had visited him for some days, and was then present, thought my proposal humane and laudable, and his friends gladly consented to the alternative.

I had been informed before I set out, of his convulsive attacks ; so I had with me a small bottle of *sedative drops*,—e. g. tinctures of castor and of volat. val. of each 3 drachms, with a drachm of thebaic tincture. There was besides brought out a bottle of penny-royal water. The apparatus being ready, I gave him a tea-spoonful of the drops, in a glass of penny-royal water, and then proceeded to business. But the reader may form some idea of the coolness and firmness I sometimes possess, when I inform him, that three different times, in the course of the operation, I was obliged to desist, so rapid were the returns of the fits ! I gave him a second dose of the bottle,

tle,



tle, and that suspended them so long, that I was enabled to finish the operation effectually. When the loose parts were raised, he was more composed. I remained in his cabin two hours after the operation ; and in this time he had but one fit. The dura-mater was blackish. I directed a cold infusion of the bark ; and the drops to be given twice a day, till the fits ceased. The dura-mater was dressed with doffils, squeezed out of spirits ; and all the compresses were moistened with the same. I directed for diet, seasoned broth, gruel and sago alternately, but with wine in the two last. In two days after, I saw him again. In the interval, the fits gradually lessened, insomuch, that he had but one fit for the last sixteen hours. Still the dura-mater retained its dusky hue, and was now dressed with bals. traumat. and the compresses moistened with spirits. In two days after, I saw him for the third time. The convulsions were still less frequent ; and for the last 24 hours quitted him. The dura-mater too, appeared much sounder, and I began to entertain

some hopes of a recovery, but was sent word, that he expired the evening of the next day. I wished much to be informed of so unexpected a death, but his friends would suffer no inspection to be made.

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#### C A S E LXXIV.

JOHN HEYNES, about eleven years old, whose parents are residents in this City, was brought to the Hospital the nineteenth of August, 1785, for advice only. Some days before, he fell down the stone stairs of a cellar, and a contusion and slight scratch on the left parietal, were the only effects that appeared. He seemed tolerably well 'till the 18th, when he grew hot and heavy with a slight swelling in his neck. A slight fluctuation under the scratch, determined me to open it with a lancet, when near a spoonful of digested matter poured forth; and

and on introducing the probe, I felt the bone bare. I pressed hard to enlarge the wound; but the mother would not suffer it. I directed a plentiful bleeding on the spot, and small doses of jalap and nitre to be given occasionally, so as to open the body three or four times. Next morning, he was again brought up. The powders answered the ends proposed, he passed a good night, and was exempt from head-ach, fever, or heaviness. The swelling about the hurt, had entirely subsided; so that I could, with the greatest certainty, determine the extent of the injury. With great difficulty, the mother consented to have the probe introduced, and I found the flesh separated from the bone, to a considerable extent. I pressed for a further enlargement of the wound in vain, though I at the same time assured her, that the bone was fractured underneath. I am told, she brought him to another gentleman, who assured her, any further operation was unnecessary. But, be this as it may, the 8th of September, I was requested to be at the Hospital at twelve o'clock, Mr. M'Knight,

who was attending Surgeon for the month, being then indisposed. This boy was then produced, and a fracture with a very considerable depression were apparent. I raised the lacerated parts, removed some splints of bone ; and with great difficulty they consented, that the boy should remain in the house 'till next morning. He was then removed, and died in two days after.

C A S E

## C A S E LXXV.

FEBRUARY 27, 1788, I visited Patrick Kelly, Stuart to Mr. Lyons of Croom. A large stone hurled at him on the 16th, struck him on the superior part of the right parietal bone ; the consequence of which was, a fracture, with considerable depression. He had been up and abroad to the preceding Sunday ; when he grew heavy, and complained much of his head. An handy man in the neighbourhood, who had been dresser at our Hospital, was sent for. He grew worse ; and on Tuesday evening, had strong convulsions, and these were the first alarms of danger. I was sent for on Saturday, and on close enquiry found, that on the preceding Sunday night, he became quite paralytic on the left side.—His pulse had that slow beat, that generally accompanies mortal concussions, and he was uncommonly low. Upon hearing my opinion

of

of the case, the people consented to the operation, and told me, that was the precise business I was sent for. He appeared evidently relieved, by removing the pressure from the brain, and this was followed by a good discharge of grumous blood, succeeded by above two ounces of pus. The dura-mater had a dark colour, and was dressed, as on such occasions. I ordered for him, a generous diet, wine whey, and an infusion of the bark. I saw him four days after. He was still uncommonly low, the dura-mater quite black; and no further discharge from within. The diet and medicines were continued, but he died the fourth day after,

C A S E

## C A S E LXXVI.

I N the beginning of laſt Auguſt, I was called upon to viſit one M'Namara, in Broadford, and another of the name of Rourke, about a mile further on the ſame road. On returning from a neighbouring fair, on the preceding day, each received a ſevere fracture on the right ſide of the coronal bone. Engaged in other buſineſs, I could not attend thoſe calls at the time, ſo heard no more of them, 'till the Friday following—Sunday being the day I was firſt ſent for. The father of Rourke then came, to requeſt I would ſee his ſon, and this was followed by a call from the other man, who, I underſtood, was in a dying way. Of Rourke, I ſhall ſay nothing, being unconnected with the preſent buſineſs; but confine myſelf to the caſe of M'Namara. On examining this man's head, I found a wound of about an inch long, had been inflicted with  
the

the fracture, and this wound had been enlarged. On raising up the parts, I saw a most deformed and extended fracture, or indeed, more properly, fractures. From near the superior part of the coronal on the right side, to the edge of the orbit, fractures could be traced! At the upper part, where the stone hit, the transverse of the injured bone was above two inches; and was there met by a second fracture, proceeding from the orbit. He grew stupid and heavy from the third day; and the young man who took charge of him, finding alarming symptoms coming on beyond his abilities to remove, told the people he would go look for some instruments, and return in the evening. Return, however, he did not; and this explains my being again sent for. For thirty hours before I came, he refused every kind of sustenance, nor could he even swallow drink. He laboured under uncommon agitation of spirits, perpetually rising up, and lying down in the bed, the pulse quick, but such was his restless state, that I could form no remark on them; but, on the whole,



whole, it was pretty evident, that the man was dying. Occupied with no consideration forever, save the most likely means of relieving the present moment ; I observed in the upper part of the fracture, where the bone was transversely broke, a large fissure. If I could introduce the elevator through this, I saw I should get under the bone, and, at least, raise the depression of the upper fracture. I succeeded in a very short time, and took out the entire piece. I passed in my fingers, and removed two more pieces, stretching up from the orbit. The entire parts were cleared, and the dura-mater looked uncommonly well.—From the moment the elevator got under the depression, and before any efforts were made, he grew quiet and composed ; and when the bones were removed, he spoke ; and after being dressed, took a draught of whey with great ease. I left directions with an handy man in the village, and desired, if he was alive, and any thing better in two days, to send me word ; however, he died the evening of the next day.

## CHAPTER

## CHAPTER XX.

Fractures, attended with wounds of the dura-mater, and contusion of the brain, mostly fatal. A case in point.—Another to shew, that wounds of the dura-mater and brain, of a less formidable nature, are remediable. Fatal instance of a wounded cerebrum, attended with concussion.—Case of a ball lodged in the cerebrum.—A formidable fracture, with discharge of the brain.—Treatment of exfoliating craniums.—Two instances of partial dislocations of the vertebræ of the neck.

THE Curious and persevering Surgeon who has imposed on himself the labour of going over the preceding sheets, will, no doubt, be surpris'd, that in so extensive a course of practice, so few instances should occur of injuries, in which the dura-mater and brain, had borne their parts.

Of

Of penetrating wounds by incisive instruments, enough has been said, to prove them in general, far from being alarming, provided the habit of body is not highly vitiated. In the instance of Dempsey (case 59,) we have seen, not only a wound, penetrating through the skull and membranes to the brain; but this injury rendered infinitely more formidable, by an extended fracture, with considerable depression, which was not relieved for 12 days, yet the penetrating wound, went on as happily as could be expected, or hoped for! But in fractures, imposed by blunt instruments, where the membranes of the brain are torn through, and this organ severely injured; there is every reason to apprehend, that fatal consequences will follow. For the very contusion of the brain, will bring on suppuration of parts of it; and when this once commences, it is not easy to say, when it will end.

## C A S E LXXVII.

ONE Taylor, a tenant to Mr. Welsh, of Doona, in a riot, received a most dreadful blow of a spade, just where the iron is fixed in the wood. It forced its way through part of the left parietal bone, through the coronal at that side, and ended at the frontal sinus, tearing through the membranes, and part of the brain, leaving a great separation of the bones, and a most profound hiatus ! This happened about eight in the evening, in the month of June, 1779 ; and soon after nine, Mr. G. Welsh called upon me to visit the man. He had bled profusely, as may well be supposed, and the appearance was truly frightful. But, notwithstanding the outrage, he was clear and collected in his intellects. To prevent the protrusion and separation of the brain for the present, which I knew must happen sooner or later, I covered the opening with fine soft linen,

linen, over which loose lint was laid, and covered the whole by plaister and bandage. Considering the nature and extent of the injury, it required little wisdom or prescience to declare it mortal ; but, I assured the people, that his dissolution was by no means near ; that a separation of parts of the brain, would take place in three or four days ; that, as it encreased, it would gradually be attended with an encreasing stench ; and, that finally, about three weeks would close the scene. I left directions how to dress him. Every thing turned out, as I had foretold, but he did not die, 'till the 27th day from the injury, preserving his intellects clear, to his dissolution !

C A S E

## C A S E LXXVIII.

AUGUST 21, 1784, Thomas Downs, aged about eleven years, was brought to the Hospital by his parents. Some moments before, he received a kick from an horse, on the upper part of the right parietal bone, which caused a wound, with an extended and depressed fracture. The lower edge of the depression, had torn through the dura and pia-mater, and made a lodgment for itself, in the substance of the brain, and through the opening, small portions of the brain were ouzing out. I immediately proceeded to the operation, and after raising up the piece that had pierced the brain, I removed it entirely, which was easily done, being nearly separated at its upper part, so deeply was the other extremity beat in ! He was collected, his pulse were regular, so I ordered no kind of medicine for him, save a decoction, which was to be thrown  
up

up in the evening. The wounded membranes were dressed with bals. traumat. and the rest of the fore with lint. In three days after, he took, at times, a decoction of the bark; the wound was dressed light, soft, and expeditiously; the wounded membranes began to form an union; and from the fifth day, no discharge of brain whatever appeared. This was followed by no untoward symptom whatever, and the boy was discharged cured the October following. However, it is to be noticed, that the February following, he was again brought to the Infirmary, a small opening having been formed, where the duramater was originally wounded, and a whitish substance slipping through it. I put over it soft lint, covered it with plaister, over this a compress, wet in spirits; the whole secured by a tight bandage. I directed the compress to be moistened once a day, but neither the bandage or it to be disturbed, for an entire week. The boy was taken back, the fore in the time was cicatrized, and he got perfectly well.

## C A S E LXXIX.

JOHN DAVORAN, about six years old, was struck by an horse on the upper and right side of the coronal bone, in a field about three miles from town, on the 30th of August, 1786. He was a good while missing, and after a search of four hours, was found by his father, quite motionless, and to appearance dead, but finding him still warm, he was brought home, his limbs rubbed with warm cloths, and he put to bed. He soon discovered strong symptoms of recovering life ; which were greatly assisted by spontaneous puking ! In an hour after, he recovered his senses, seemed composed and quiet, and so continued. September the 2nd, he was brought to the Hospital, when a considerable fracture appeared, with a formidable depression. On removing a part of the sound bone, at the edge of the fracture, to make room for the elevator, a considerable  
discharge



discharge of matter followed, succeeded by some portions of the brain. It appeared, that the depressed part forced its way through the membranes to the brain, the surface of which had suffered greatly. The four following days, a good deal of matter poured forth at each dressing, mixed with some portions of the cerebrum. The 6th of September, a large portion of the dura-mater pushed through the wound, with a quantity of the brain, about the size of a small apple, both of them dark and discoloured. The 7th, the obtruded part of the brain fell off, and was succeeded by another of like surface and figure. The 8th, the left side became paralytic, but he was still sensible. Lumps of the brain now presented themselves every morning to the fore, and were nearly melted down by the next dressing, to make way for others. The smell from the fore, which about the fifth day became disagreeable, was now scarce supportable. This was nearly his situation, except that he grew visibly weaker, to the 16th. From that day, to the 26th, he was at times delirious. After

this to the 4th of October, he was nearly insensible ; when he expired, with very little pain or trouble !

In this case, the fracture was accompanied by concussion, because the boy remained five hours in a state of insensibility after the injury ; and this probably might dispose the brain to that rapid dissolution, which was not the consequence in the instance preceding it. *I have in general remarked, that discharges of matter, succeeding the elevation of a depressed bone, are by no means favourable signs ; and that a dissolution and discharge of the substance of the brain, is seldom or ever restrained ; and of course, may be deemed a mortal sign.*

## C A S E LXXX.

A most respectable character, whose premature death has been universally deplored, received September 5, 1791, a proud message, in consequence of some severe words hastily expressed, on the conducting of some legal process. His intentions, it is said, were to receive his antagonist's fire, and then quit the field, without any further apology. He was remarkably brave and generous, and besides, an excellent shot. The antagonist's *second* recommended to his principal, by no means to part with his first fire, till he received that of his adversary, otherwise he would infallibly fall ! They took their different grounds, and remained for near three moments, with presented pistols, (my friend delaying the time, in order to force his fire.) But perceiving by the level of his pistol, that it was but too well directed, he hastily let fly, in order to derange his antagonist. The fire was instantly re-  
turned

turned, and the gallant O'C—— fell! he was raised from the ground; and in about three or four moments, so far recovered, as to be able to move to a carriage in waiting; but unable to bear the motion, he was carried to an adjoining public-house. An express was forwarded to Ennis, for assistance; and in some time after the arrival of these gentlemen, I was sent for, another messenger followed, announcing, that it was a contused wound only, and that the ball did not penetrate. In consequence of news to me so pleasing, I was about to return, but would not be suffered. I arrived about eight in the evening,—six hours after the affair and found him in bed, sensible, and composed, but with a very rapid hard pulse, though he had been twice bled in the time, and he complained of a most severe pain in the back of the head. The ball had forced its passage through the middle of the temple of the right side; and upon introducing the probe, it appeared, that its penetration into the skull, was about an inch more posteriorly. Beyond this, was a considerable tumefaction,

m-faction, reaching to the ear. We retired for a short time, to an adjoining room, and I there informed his friends of what I apprehended was his real situation, and that I must immediately proceed to an operation. I explained to O'C—— the nature of the injury, in the gentlest terms; informed him, that it required a closer investigation; and how much I felt, that so disagreeable a task fell to my lot! He immediately acquiesced, and with a circular sweep, I removed the integuments immediately surrounding the fracture, and took out three splints, which gave room to the elevator, and I raised up a considerable piece of the coronal, deeply immersed in the brain. The bleeding was rapid, and this determined me to dress up hastily, and the gentle pressure of an hand soon stanch'd the blood. It was both idle and ungenerous to mince matters, so I fairly communicated to his friends my opinion and my apprehensions——that the ball must have made a deep lodgment for itself in the substance of the brain; and that it must prove mortal——probably the scene

might

might close in two or three days, from the rapidity of the present fever and inflammation ; or, if he was able to weather this storm, the suppuration of the brain would follow in some days after, succeeded by paralysis and death. I strongly recommended to them the speedy adjustment of his spiritual and temporal affairs, and retired for the night to a gentleman's house in the neighbourhood. About eleven that night, word was sent me, that he was better, very strong, and his friends hoped, not so bad as I apprehended. It was in consequence proposed to me, to call in more help. I told them, I wished for a gentleman, whose experience and abilities I could depend on, and mentioned Mr. M'Knight. Dr. Shearer was mentioned with him, and to this I could have no objection. A messenger was directly dispatched. Mr. M'Knight was indisposed, but Dr. Shearer arrived about one next day, and with him, a couple of young gentlemen as assistants. I removed the dressings soon after, and the nature of the injury appeared in its most marked features ! The ball in its passage,

had

had fractured and depressed the bone, in every direction round it, and its opening into the brain, resembled that of the tube of a funnel. There was no necessity for the trepan. Too much space had been already made ; so, with some pains and industry; I removed some pieces of bone, and raised others. The perforation of the ball was so considerable, that instead of a probe, I easily introduced my finger above an inch, without pain or trouble. My mind had been already made up, about the issue of this business, and I repeated it fairly and freely. The remainder of the day and night passed like that of the preceding, but Dr. Shearer having a call to Limerick, begged I would dress early next day. I did so. The discharge was very inconsiderable, but the fever was still very rapid, and the pain in the back of the head continued. I wished Dr. Shearer to remain, as I apprehended affairs were approaching fast to a final conclusion ; but other engagements made it impossible. At 12 o'clock that day, I met the venerable Dr. Finukan, his son, and Dr. M'Donough. The  
fever

fever rather encreasing, we agreed to draw more blood. It was highly buffed and inflamed, and the pulse at this time at 98. It was determined in four hours after, if the fever did not lessen, to venture another bleeding. It was accordingly done, but the blood was quite pure, and the pulse became so rapid in an half hour after, as to beat 119 in a minute. What more need be said to this business, but that about twelve that night, he expired; but with the sentiments of an Hero, and a Christian!

I had proposed next morning to have the head opened, supposing an inquest necessary; but it would not be heard; besides, it was remarked to me, that the crouds, who flocked about the body of the deceased, had already caused a swelling and putrefaction. It was, however, examined, after my quitting, and I am told, confidently affirmed, that no ball was found, that it rebounded, after causing the fracture, and flew off; and, as a further proof, it was added, that if the ball had penetrated,

he



he could not be in existence an hour after ! To attempt seriously, to refute those assertions of rashness and inexperience, would be below the dignity of a professional man, for it is a fact, well known, that balls have been found inside the cranium, many years after their being received, and during this interval, the parties enjoyed good health. Besides, it remains to be explained, by what mechanism, a ball could cause a fracture, and that at the distance of an inch from its entry, and then rebound. Could it recoil through the wounded part ? The orifice was much smaller than the size of the ball, which proves the velocity, with which it was carried. For it is a fact, too well established, that the entrance of a ball is always much smaller than its exit. No other passage could be found ! But enough of this contemptible business.

R E M A R K.

## R E M A R K.

THE Symptoms attending this Case, in my opinion, merit particular attention ; and yet, it may probably be more or less the case in all penetrations of the skull from fire-arms. My want of further experience in this line, makes me speak thus diffidently. But if it be the fact, this useful inference may be drawn—  
*That where fever, pain, and inflammation, very speedily succeed to wounds of this class, they must become a strong presumptive proof, in the first instance, that the ball has passed into the brain.* We have seen in the course of this work, very many instances, (to which more could be added) of fractures, with deep depressions on the brain, without this organ's being wounded ; and others, in which it was evidently so. Yet, in all these instances, scarce the existence of fever could be traced for many days, and reason remained unimpaired !

Even in the present case, though fever and pain followed ; though the passage into the brain was much larger than the external orifice, and so profound, as to afford a free introduction to my fore-finger of near two inches ; yet, even this aggravated circumstance did not deprive the patient of his reason ! How far these remarks may assist, in forming a clearer opinion of the nature of this organ, of inflammation of the brain, and of the prudent use of opiates instead of stimulants in these cases, must be submitted to the Physiologist or Theorist, and to the much more useful member, the practical Physician.

## C A S E LXXXI.

ON the 16th of last December, some trifling dispute arose near the Exchange, about hay. *As usual*, the transition to blows soon followed. The party assaulted flew to an adjoining house, seized on a bar of iron, and soon returned to the charge. The two others went off, and one Moynehan, an industrious farmer, occasionally standing in the place, was desperately assaulted. Upon a supposition, that he was the aggressor, he was, in this situation seized on, and committed to prison.—Next morning, his innocence appearing, he was discharged, and dressed by some one. On the morning of the 18th, I was called in, his head had been shaved, and though a considerable depression of the coronal bone was manifest, yet nothing appeared externally, but a very small wound, not larger than the orifice of a lancet, and equally smooth and even. Through  
this,

this, I passed my probe, and soon informed myself of the ravages underneath. The blow had been levelled at the right side of the coronal bone, almost adjoining to the coronal suture, and at some distance from the sagittal. It occurred to me from the profundity of the fracture, and the inequalities I felt, that the bone had been broken into different pieces; and of course, if I could disengage one, that room enough could be acquired, by means of the elevator and forceps, to remove others, and prevent the use of the trephine, which I have often successfully done. Agreeable to these ideas, I removed about the size of a crown-piece of the flesh, surrounding the fracture, and fell to work. In a little time, I extracted a piece of the coronal bone, much larger than the orifice. At the edge of the fracture, the bone was entire, but about an half inch from this, the internal table was completely detached from the external, and sunk deep in the brain. The extremity, so beat in, was pointed, smooth and sharp. Three other pieces of less magnitude, as well as some splints, were removed.—

It

It was evident to me, that the brain was wounded, because some of its medullary, as well as cortical substance, appeared on the surface of the wound. His pulse were, as usual, slow and regular, he was perfectly composed, and at the same time, highly sensible of his critical situation. I ordered, as usual, a julap--ex mixt. salin. aq. prelogic tinct. castor and valer. with twenty drops of tinct. theb. to be given once in three or four hours; and directed for his diet, sago with a little wine, seasoned broth, &c. He seemed lighter next day; but the dressing had a sour smell, even before taken off. This day, more of the brain appeared, but the discharge was discoloured and blackish. The 20th, the size of a nutmeg of the brain, was pushed up through the fore, and the smell of this last rather disagreeable. I told him in the gentlest manner, what were my sentiments, with respect to his case, and recommended to him to prepare for the worst, whilst I had small hopes, that affairs might take a turn for the better. He told me, that he had a clergyman the evening before, and had also

also settled his temporal concerns. The 21st, a much larger piece of the brain appeared, which I removed with the side of my probe, and dressed the wound with bals. traumat. The 22d, the size of the obtruding brain was not so large, but his friends, from the sight of it, declared he could not live. I told them, I was of the same opinion ; and, in consequence, they talked of removing him directly to the country. I remarked the great danger of this measure—that he might die on the road—that he would be removed from every assistance, and the trouble and expence attending an inquest there. However, carried away he was, and I then wished to be informed from day to day, how he went on. In three days after, word was brought me, that he was not worse, and that no part of the brain was pushed out that day. The 28th, he continued the same way, but an hard substance and brown, the size of a small apple, filled up the fore. I desired it to be sprinkled with roche allum at every dressing, and in every thing else, treated as usual. January the 2nd, the excrescence

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continued,

continued. and matter was pressed into the wound, from a little above the external canthus of the eye. I could now form no opinion ; so told them, I thought it necessary to see him. On a persuasion, that he could not recover, they did not choose to be at this expence. On the 4th, things remained as before, but with this addition, that the discharge from near the eye had encreased. As he assured me, he received but one stroke, and that the effects of this were highly evident, it never occurred to me, to search for a fresh injury, where I could expect none. I now told his brother, that if he came, or sent at an early hour next day, I would visit the man, from principles of commiseration. I accordingly went, and an horrible and disagreeable passage it was ! The protusion was part of the brain, become hard from the escharotic ; but what was my surprize, on examining the place from whence the matter came, to find a very considerable and extended fracture stretching from the former, to very near the orbit,



bit, which proves he must have received more than one or two blows ! The matter was digested, and had no bad smell. The bone was quite detached from the upper orifice of the transverse fracture, at its posterior side, but adhered by means of the pericranium, at its anterior edge. Apprehensive that if I removed this last portion of bone, the brain might pour forth, I contented myself for the present, with raising it up, by means of the elevator ; and told them, that if he held his ground for about six days longer, it might safely be removed. I had accounts of him from day to day—That the discharge from the bone continued ; and that excrescences were pushed up to the fore, but no request to make another visit—probably they expected I would do it from myself. This not proving the case, the 12th of last January I was called on. A fungus of the size of a small apple, covered the surface of the wound. This, I easily removed ; separated the adhesion of the pericranium, and removed a piece of the anterior part of the coronal, two inches long, an inch broad at top, and an inch and a quar-

ter at the bottom. Some matter and blood followed, but nothing else. The surface was lightly dressed; the fungusses ceased to shoot out; a considerable cavity became formed; a watery humour was discharged at every dressing, and by the end of the month he was quite well—Had I recollected early enough, that the wound of the brain, was almost an incisive one, I would certainly be more cautious in my prognosis.

Much has been said on the exfoliation of denudated parts of the cranium, and on this subject, Mr. Quesnay \* has published a very interesting paper. On subjects obscure, and involved in difficulty, every possible light should be thrown. On a careful retrospection of my own practice, I have met but little trouble from this complaint. Formerly, when I used the knife with a liberal hand, the bare bone has sometimes become discoloured; at other times, dry, with little tendency to cover. In both cases, I have made slight perforations

\* Memoires de l'Academie Royale de Chirurgie, T. 2. p. 96.

on the bone, and these have been generally followed in two or three days, by little granulations of flesh, and then by a new pericranium, and firm covering. In fact, I have considered Nature as powerful in her resources ; and the sensible Surgeon or Physician, who carefully consults her, in her own wants, will nowhere meet a more useful assistant. More bone is laid bare in a fractured skull than is necessary ; or, at the very instant of the fracture, its force may extend to little laminæ, on the outer table of the sound bone. In the first instance, exfoliation may, or may not follow ; in the second, it certainly will. Why is the bone liable to dryness or discoloration in the first instance ? Is it not because these parts are exposed to cold air, that Nature never meant so to be ; having, besides, a particular covering for the bone itself, fleshy integuments as an additional guard. In cases, like this, the lighter and speedier the parts are dressed, and the less encumbered with extraneous substances, the speedier Nature will bring about her own business. Let us not apprehend, that the parts

may heal too soon, and so oppose Nature's works. To the end of time, they will not heal firmly, if the bone underneath is not found and covered. So that in such practice, we rather retard, than assist Nature. If the bone should appear dry or discoloured, I would recommend slight perforations here and there through part of the outer table, cover the part with soft lint, imbibed in spirits; and not open it, but every other day. I have sometimes sprinkled the discoloured bone with *pulvis angelicus*; and I have more cases of this kind, that succeeded without an exfoliation, than that did with it.

Where the violence of the hurt has extended to the injuring parts of the outer table, adjacent to the fracture, exfoliations may undoubtedly be expected. But still let it be remembered, that it is the work of Nature, and that she will be our best and surest monitor. Let us only second her views, and things will soon come about, without danger or much delay. I have met with a variety of uncovered bones :

I have

I have seen pale, flabby excrescences spring up, and at the same time felt the bone bare underneath. I have from time to time sprinkled this exuberant flesh with pulv. angelic. and have at the same time, carefully avoided poking the bare bone. Things have in a short time assumed a better aspect: the rising flesh has grown better coloured and firmer, and Nature thus not interrupted in her business, has soon brought affairs to an happy issue! I have sometimes observed a black speck in the middle of this flesh, and to rise with it. This, I have to a certainty known, to be a scale from the bone. I have not nevertheless poked the fore with my probe, nor altered my dressing—namely, dry soft lint, sometimes animated with the escharotic; and in two or three days have, with my forceps, removed a scale of the bone, often larger than a shilling; and every thing has terminated happily. The following instance produced the greatest number of exfoliations I ever met with; and I have therefore reserved it for this place.

## C A S E LXXXII.

WILLIAM DAVITT, clothier of this City, had some dispute with a stout, athletic young wench, who, from the consequences, we may conclude, was not possessed with superabundant passiveness and mildness. It happened in the middle of the day, at the Market-house. He called her by some hard name, and she directly prostrated him. He fell on his back, and she seized a large brass weight, and struck him repeatedly on the left side of the coronal, and a little above the frontal sinus. The man was carried off; and being informed, that he was extremely poor, and had a good many children, I was impelled, from motives of humanity, to visit and assist him. The fracture was considerable, and the bone deeply beat in. I trepanned him next morning, raised the depression, but I made a much freer use of the knife at that time, and long before it, than I did

I did since. In the course of some days, granulations appeared in some parts; in others, the bone was discoloured and dusky. The diseased bone I sprinkled with pulvis angelicus, and the whole surface was dressed with soft dry lint. I never opposed the act of healing; and I even THEN conjectured, it would advance the scaling of the diseased bone. The event shewed I was right. One or two black points of the scales appeared, and in two or three days after were removed. These were followed by others, which were taken away with equal facility. Still the great object of healing went on, and met with no opposition by an impertinent intrusion of the probe. Even when the cicatrice was almost formed, two splints, one of them larger than a shilling, presented themselves to the surface of the fore! This man got a lasting cure, and is now in perfect health, though it is about twenty years since he and this gentle nymph had the *fracas*.

That

That I may leave nothing unsaid, with respect to disorders, produced by injuries to, and falls on the head, I shall now present to the reader, two most singular cases—I believe the only ones extant—of a most alarming and melancholy nature. They occurred in the space of five years; yet, from their happening in so circumscribed a part of the kingdom, I suspect they must have been more frequently met with, did gentlemen take pains to preserve diaries of remarkable cases. A partial or incomplete dislocation of the vertebræ of the neck, from a fall on the head, it must be confessed is a new case; though sudden deaths, from a complete dislocation, in hunting or hard riding, is by no means so.

C A S E



## C A S E LXXXIII.

ABOUT twenty years ago, when the late SPEAKER's, now the See-house, was building, one of the masons fell back from the scaffold, then not above four or five feet high, head-foremost, on a soft, grassy mould, and when taken up, was totally deprived of motion and sensation ! In this helpless condition, he was carried home on a door, his head close shaved ; and he was visited by other gentlemen, as well as by me. No vestige of any injury whatever, could be traced in any part of the head. He was composed and sensible, his pulse slow and strong, but from about the third vertebra of the neck, down, he was deprived of motion or feeling ! His head was stiff, and a little bent back, but his chin seemed pushed forward. We directed a warming, invigorating leniment, to chase  
the

the head and spinal marrow, and the limbs to be rubbed with a flesh brush. I know not, whether he was regularly visited after this ; so shall confine myself to what came within my own knowledge. About six hours after, I paid him a second visit, and whatever doubts I had entertained, as to the nature of the injury, were now completely done away. His discharges by stool and urine were involuntary ; and, of course, there was a visible pressure on the spinal-marrow. I examined the vertebræ of the neck, and could feel no sensible projection in any one of them. I placed one hand under his chin, and the other at his poll, to draw up the head as much as I could ; and from this, he acknowledged a sensible and momentary relief. I caused a strong man to press down his shoulders, and then attempted a more violent extension. This procured him more ease, but the effect immediately ceased with the cause. I saw him no more, but heard the involuntary discharges soon produced excoriations and gangrene, and he died the third day.

Whatever

Whatever opinions other Gentlemen might entertain of this case, it was to me, clear and decided, that a partial pressure of the spinal marrow, at the third vertebra of the neck, was the cause of his death. I wished to examine the parts, after dissolution, but would not be permitted.

C A S E

## C A S E LXXXIV.

ABOUT five years after, a servant to Mr. Arthur, of Gleanomra, but who was then a resident in this City, in assisting to make a stack of hay, fell backwards from the side of the stack, at no great distance from the ground. His head came first to the soft mould, and he was taken up motionless and totally insensible, from the neck down, and his natural discharges were involuntary. The family Physician and Surgeon were sent for, and attended him for three days. Mr. Arthur then begged, I would visit, on principles of humanity and charity. I did so. The head was stiff, and a little bent back, and the chin protruded, exactly as in the former case. I carefully examined the vertebræ of the neck—for these of the back and loins were out of the question. I imagined there was a small preternatural projection of the fourth vertebra. I made such an extension

tenſion, as in the preceding caſes. He found himſelf much relieved, and continued longer ſo than the maſon. This encouraged me to propoſe a kind of ſuſpending band, by which the head could be raiſed up in a ſtraight line, and by way of counter-tenſion, the ſhoulders preſſed down by one or two perſons, whiſt, with a finger, the projecting vertebra might be preſſed into its place, but I heard that my propoſal was turned into a kind of ſneer. So not chooſing to enter into any kind of altercation with gentlemen, whoſe purſuits in the line of medicine, are different from mine, I ceaſed beſtowing any further attention to this caſe. The man died the ſeventh day, and it is very probable it would be the caſe, had even my method been adopted.

*F I N I S.*



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## A P P E N D I X.

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I N the course of the preceding sheets, I had frequent occasions to remark, that in every skull, the injury was more extended on the internal than the external table of the bone, the following case which occurred since the finishing the Work, is too important, and too much in point to be omitted.

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### C A S E LXXXV.

WILLIAM MOORE, one of our Mail-Coach-Drivers, fell into idle company, on the night of the 5th of last September; a dis-

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pute

pute arose, and he received three severe wounds on the superior part of the left parietal bone, each above two inches long, all jagged and deformed, being inflicted by blows of a large kitchen tongs. The first was near the sagittal future; the second in a line nearly corresponding with it; and the third was a little more posteriorly. The night of the 6th, he was brought into the Hospital; and next morning I examined him. In the first wound I easily perceived the bone bare; in the other two, not sensibly so. But as I am not over-fond of too much poking, I concluded in a couple of days, when suppuration was established, I could be more decided, and with less pain and trouble. Soft lint was laid on the surface of the wound, covered by digestive, and the head bound up. The pulse were pretty full and hard, and he complained of head-ach. Some blood was therefore drawn, and he took powders of nitre and jalap to open the body. The tenth, I had a consultation, and it was not decided, whether there was a fracture



fracture or not. The eleventh, I found a free communication between the first and second wound, and that the bone was *here* also bare. I directly opened the communication, and removed some of the detached integuments. I now found to my surprize, in this second wound, a considerable fracture, with great depression. I cleared away the parts to make way for the trephine; but being a good deal fatigued with other business in the house, I deferred it to next morning. That night I was served with a crown summons, to attend the Assizes of Ennis next day, and set off at an early hour next morning. I did not return till late the 15th, and next morning I found my man just as I left him, but free from fever, head-ach, or any alarming symptoms. I applied the crown of the trephine just to the edge of the fracture, and having made so deep an impression, that a little blood appeared at the sides of the perforation, and upon examining with a quill, found the bone nearly divided in every part; I introduced the elevator, thinking

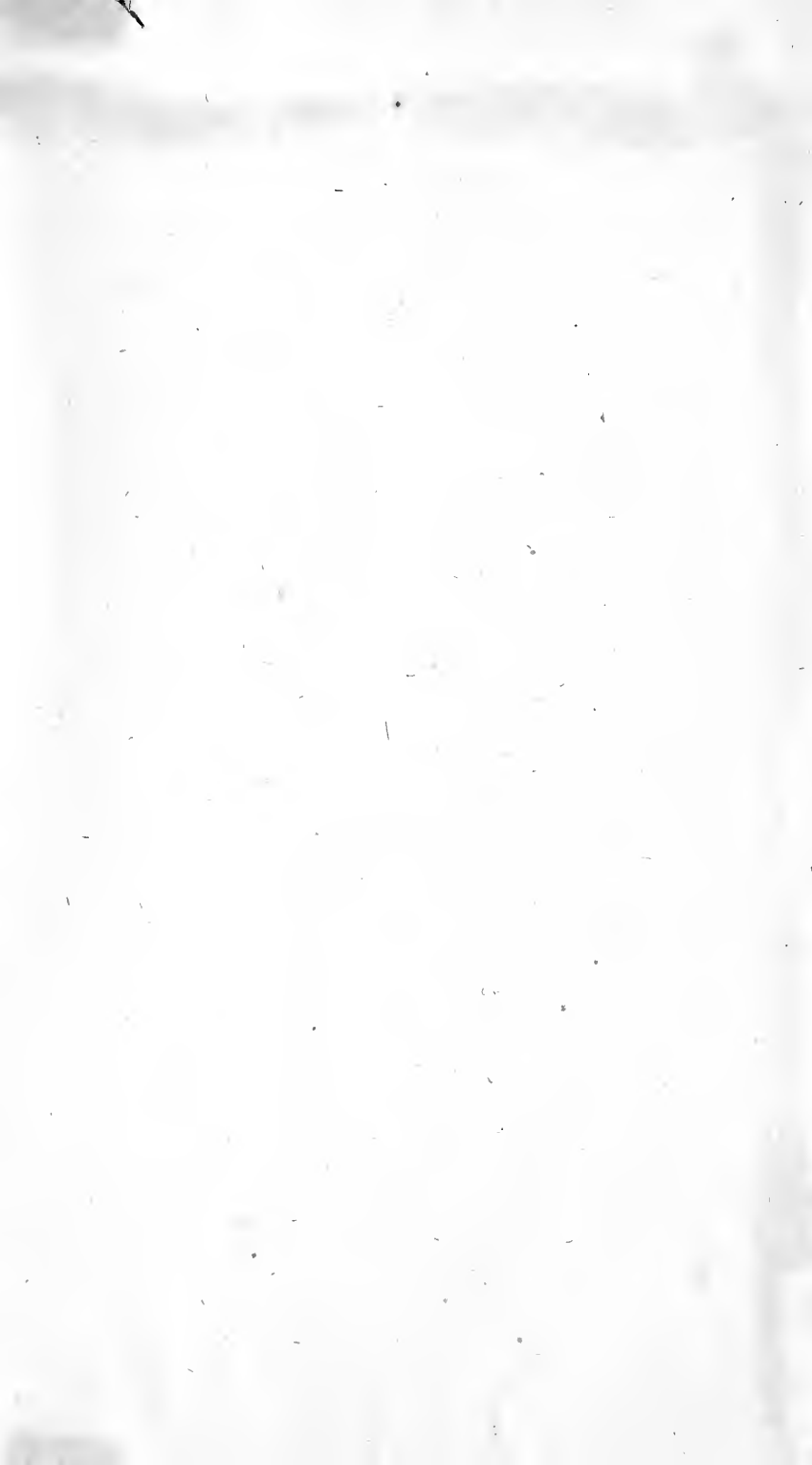
gently to free the bone ; but what was my surprise, when the external table separated entirely, and the internals still covering the brain ! I dressed lightly, and having a strong dependance on my hand, the next morning, I applied the instrument to the second table, and with a good deal of caution, fairly removed the piece ! The elevator was now introduced, the depressed piece raised to its level, and the man got an expeditious cure. In this case, we see the fracture of the internal table to stream from the fracture, and under the sound bone !

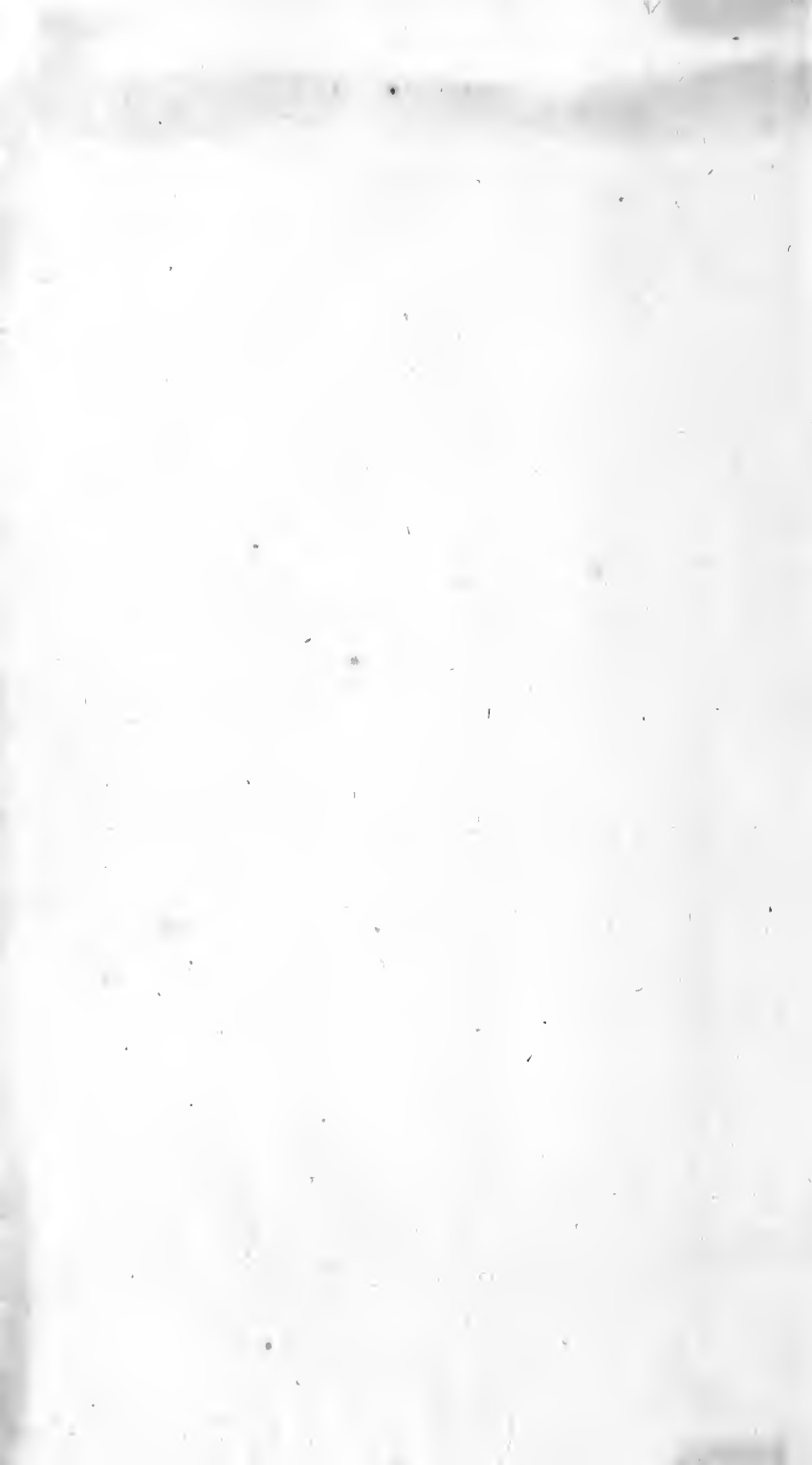














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